



6th February 2017

Committee Secretary
Standing Committee on Industry, Innovation, Science and Resources
PO Box 6021
Parliament House
Canberra ACT 2600

Dear Sir/Madam

Re - Social issues relating to land-based driverless vehicles in Australia Inquiry

1. Introduction

1.1 The Motor Trades Association Queensland (the MTA Queensland or the Association) tenders a submission to the House of Representatives Standing Committee on Industry, Innovation, Science and Resources inquiry into the social implications of driverless vehicles.

1.2 The MTA Queensland does not propose this submission to be exhaustive; the intention is to contribute comments which are in the purview of the Membership and relevant to the terms of reference which comprise:

1.2.1. What social issues are relevant, such as:

- a. general social acceptance levels
- b. passenger and non-passenger safety
- c. legal responsibility and insurance
- d. potential impacts on employment and different industry sectors (such as the taxi industry)
- e. access and equity issues (such as increasing individual mobility for the elderly and people with disabilities)
- f. potential public transport applications

1.2.2 How each social issue is being handled, including the opportunities and challenges for each issue.

1.2.3 Recommendations to progress action on the social issues identified.

2. Submission

2.1 Autonomous vehicles/electric cars have the potential to make a significant contribution to resolving the challenges facing Australia's communities and conurbations including: changes in national and community economic spatiality such as where people live and desire to live, population distribution, urban sprawl and logistics; congestion; the future economic geography of the nation as it transitions from a

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mining to a more broadly based economy; and the location of social infrastructure and community amenities.

2.2 Experts predict that by 2030 there will be some five million electric cars on the nation's roads and a significant proportion of these will be driverless. Indeed, 'in 10 or more years, smart cars and infrastructure will be commonplace' (The Future of Compulsory Third Party in Queensland, prepared for the Motor Accident Insurance Commission, PwC Chair of Digital Economy at QUT, p. 14). These vehicles will introduce exponentially profound economic and societal changes that can contribute to improved road safety, mobility, productivity and outcomes.

2.3 Autonomous motor vehicles have a high potential utility index and while it is recognised autonomous vehicles are not a complete solution to resolving national and sub-national spatial problems; with comprehensive planning over the longer term they have the potential to make a significant contribution. We note that in an IDTechEX summary report, there are predictions of continued growth for industrial and commercial vehicles powering 'past 65% of the market - more than double that of cars' (Harrop, P Dr, Electric Vehicles change the world 2017-20137, Summary Report, IDTechEx <http://www.idtechex.com>).

General social acceptance levels

2.4 Similar to trends for new technologies such as the internet and mobile telephones, the likelihood is that there will be differences in the immediacy of social acceptance levels of autonomous vehicles dependent on changed generation to generational and education differentials. Over the long term there will be substantial levels of social acceptance, as evidenced by recent research which suggests that the 55+ cohorts have embraced technology changes for economic and social purposes.

2.5 Peer-to-peer lender RateSetter's research indicates that '44 per cent of over-55s earn money through the sharing economy services such as online marketplaces, ride sharing, renting out room to travelers and lending money on online platforms.' According to experts, seniors are the best placed to profit from these new services which are now used at least once a month. Online marketplaces such as eBay and Gumtree remain the most popular part of the sharing economy, with 54 per cent of people using them. Ride sharing services such as Uber have been growing the fastest (Courier Mail, Seniors get fair share of gig economy, 4th February 2017).

2.6 The main down-side to general social acceptance is what may be termed as 'techno fear' for the upper 'baby-boomer' age bracket. In this circumstance, there is a reverse relationship where the people to benefit the most from autonomous vehicles will be older generations but it will be the younger cohorts who will assimilate the technology at the most rapid rate and apply it for professional or private advantage.

2.7 It appears that a challenge for government, community organisations and industries over the longer term will be the implementation of programs to assist older generations to digest the new technological knowledge and adjust to the benefits of emerging transport choices which include accessing or owning autonomous vehicles. Again, similar to electronic devices it will be the take up of autonomous vehicles by the younger cohorts that will influence older generations to utilise the emerging choices and transport modes to their advantage.

2.8 There may be geographical differentials (urban and regional) to the general rate of social acceptance of autonomous vehicles due in part either to location or comprehension of the technology and the geographic disposition of support infrastructure to service autonomous technology.

2.9 There is a need to address the social equity of the introduction of autonomous vehicle technology. Economies of scale and business models are likely to favour the urban uptake of this technology and if the social utility of the introduction of autonomous vehicles is to be equitable, support programmes for rural and regional areas need to be considered.

Passenger and non-passenger safety

2.10 The economic cost of road trauma in Australia is estimated at \$30 billion per annum, and the social consequences are impossible to measure. The expectation is that autonomous vehicles will improve road safety outcomes by preventing a high proportion of road collisions, reducing deaths and avoiding a considerable number of serious injuries. Studies estimate that road accidents maybe reduced by as much as 90 percent by removing human error (Chester, D, MP, Road Trauma Oped, The Australian, 4th January 2017). Tesla in the United States has collated empirical data for its autonomous and driver operated vehicles and determined that the accident rate for autonomous vehicles is forty per cent lower than for driver operated vehicles.

2.11 The current policy framework that includes the *Motor Vehicle Standards Act 1989* and the *Motor Vehicle Standards Regulations 1989* and the *Competition and Consumer Act 2000* has demonstrated a general competence to protect the safety of the motoring public and to set standards for the health of communities. The emerging technological paradigm requires that Commonwealth and State legislation and regulations must be restructured to satisfy passengers and non-passengers that autonomous vehicles will operate safely against any risk assessment or criteria reasonably set by social values. Further, society will have expectations that the introduction of autonomous vehicles will deliver a social utility dividend that is greater safety, lower costs, enhanced mobility and substantial urban spatiality compared to that achieved by the technology that it is displacing.

2.12 A priority must be a uniform safety standard through the harmonisation of road safety laws and registrations and licensing systems. Equally there must be a safety assurance framework that engenders confidence to passengers and non-passengers that the autonomous vehicle regulatory framework will provide a high level of safety expected by social norms.

Legal responsibility and insurance

2.13 An issue to be addressed is the legal responsibility when there is a computer or a mechanical or other electronic malfunction with an autonomous vehicle which results in a collision. Inevitably there will be accidents deriving from the use of these vehicles. It is noted as technology takes over from human drivers controlling motor vehicles, liability will shift to the automotive value chain, principally car manufactures, and away from the traditional attribution of liability to vehicle drivers. Legal responsibility pertaining to a collision that injures or causes death is an issue the Association delegates to the professionals with the skills and knowledge to address this complex legal issue which is beyond the purview of the MTA Queensland.

2.14 The MTA Queensland draws attention of the Inquiry to the comprehensive study entitled 'The Future of Compulsory Third Party in Queensland' prepared for the Motor Accident Insurance Commission, by PwC Chair of Digital Economy at QUT. This study's 'digital economy synopsis' (p.18) stated that:

The need for a universal, road trauma insurance scheme is confirmed for at least the next 10-15 years, particularly with the continuing use of conventional vehicles. As automation technology advances, the costs associated with road trauma are expected to decrease at a corresponding rate. Medical advances and better assistive technologies will also effectively help injured people recover quicker. Ultimately, the CTP scheme in its current form will become redundant. In the short term, we argue that the CTP scheme will need to be adjusted and modernised...

The Association is of a view that the paradigm shift in motor vehicle collision risk caused by the emerging collision avoidance technologies in autonomous vehicles will have consequences for all motor vehicle insurers as stated in the above study.

Potential impacts on employment and different industry sectors (such as the taxi industry)

2.15 The MTA Queensland has long recognised the disruptive effect of structural and technological changes taking place in the automotive value chain. The change from fossil fuels as the main energy source for transportation and the progressive displacement of the internal combustion engine means that Australia's society and the economy will undergo fundamental transformations. For this purpose, the Association has scheduled a *Carmageddon* Symposium (7th March) to provide the leadership and advance understanding of present and future disrupters in the motor trades and to fill the knowledge gap on the digital economy and the emerging technologies in this sector. The extent and velocity of technological changes for enterprises engaged in the motor trades value chain will be challenging and it is likely to demand completely new and different business models if enterprises are to successfully adapt to the paradigm changes which autonomous vehicle technology will initiate.

2.16 The automotive value chain is dynamic as evidenced by the technological structural changes across the twentieth and twenty-first centuries. Aside from the manufacturing sector, the most significant changes have been in the automotive electronics and pollution regulations. It is expected that the next decade will see a greater change to the automotive value chain that has occurred over the past 50 years as the internal combustion engine is displaced by electric and autonomous vehicle technologies. The MTA Queensland's training establishment (the MTA Institute) structured courses to provide industry with skilled employees to service the current generation of motor vehicles including automotive electronics and emissions. This will be augmented with courses relevant to electric powered and autonomous vehicles.

2.17 As indicated in 2.1 there are some 90,000 persons employed in the motor trades. The expectation is that there will be significant changes in the employment profiles resulting in jobs phased out in some trades and new opportunities created in others. In regional areas employment will be less likely to be impacted by technological change as the internal combustion engine will continue to be the motor vehicle of choice.

Potential public transport applications

2.18 The overview issues and the major challenges to be addressed relate to economic spatiality (which includes urban and personal transportation) and if not resolved, the economic cost of not doing so will detract from the standard of living and quality of life. The autonomous vehicle technology has the ability to make a paradigm change in access to public and personal transportation making a significant contribution to meeting the challenge of changing spatiality facing Australia's communities and cities.

2.19 The social overhead cost of providing infrastructure for public and private transport will demand that governments and communities consider the socio economic benefits of public and private transport logistics of autonomous vehicles to ensure national economic growth and livability. A 2015 Infrastructure Australia report (Australia Infrastructure Audit - Our Infrastructure Challenges, April 2015) stated that 'Australia's transport sector makes the greatest contribution to our economy but it also needs the greatest amount of reform (Executive Summary p.1).

Demand on many key urban corridors is projected to significantly exceed current capacity by 2031. The importance of managing urban transport is underlined by the fact that in 2011, the cost of delays on roads in the six largest capital cities was \$13.7 billion. This figure is projected to grow by around 290% to \$53.3 billion in 2031, in the absence of appropriate strategies including integrating land use and transport planning, new road construction, additional public transport investment and the introduction of demand management measures (op.cit. p. 8)

The annual economic impact of congestion across Brisbane, the Gold Coast and the Sunshine Coast alone is forecast to increase from \$1.9 billion in 2011 to a potential \$9.2 billion in 2031 (Australia Infrastructure Audit - Our Infrastructure Challenges Report, Volume 1, p.32).

2.20 Autonomous and partial autonomous motor vehicles based on renewable energy sources represent a new generation of technologies that can be applied to the problem of solving future congestion and economic geography. These vehicles should be considered from the perspective of their potential for solving current and future spatiality dilemmas of a first world economy that demands a high standard of living and quality of life.

2.21 To date the answers to the challenges of spatiality have been public transport based, with an offsetting by private transport that has had the practical consequence of increasing congestion, fuel costs and parking costs and emissions. In retrospect, planning has lagged infrastructure and technology but the advent of autonomous vehicles coupled with innovative delivery of associated services by the public sector, industry and community organisations provides a breathing space to address spatial challenges.

2.22 Public transport systems/modes may emerge that provide solutions not available previously, but to date public transport has not been the transport mode of choice and it seems on average less than 10 per cent of Australia's workforce utilises public transport to travel to work. Private motor vehicles have been the transport of choice resulting in urban transport congestion, environmental degradation and generating social cost for communities and cities. Autonomous alternatively powered vehicles have the potential to make a significant contribution to the solutions needed to curb these damaging trends.

3 Background

3.1 The MTA Queensland is the peak organisation in the State representing the specific interests of businesses in the retail, repair and service sector of Queensland's automotive industry located in the State. There are some 13,000 automotive value chain businesses employing in excess of 90,000 persons generating in excess of \$14.5 billion annually. It is an industrial association of employers incorporated pursuant to the *Industrial Relations Act* of Queensland. The Association represents and promotes issues of relevance to the automotive industries to all levels of Government and within Queensland's economic structure.

3.2 The Association is the leading automotive training provider in Queensland offering nationally recognised training, covering technical, retail and the aftermarket phases of the motor trades industry through the MTA Institute (MTAI) - a registered training organisation. It is the largest automotive apprentice trainer in Queensland employing trainers geographically dispersed from Cairns to the Gold Coast and Toowoomba and Emerald. The MTAI last financial year accredited courses to in excess of 1,600 apprentices and trainees.

4. Conclusion

41 The MTA Queensland submits these comments for your consideration. We would be pleased to provide further comment on any matters in our submission that may require further clarification or amplification.

Yours sincerely



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