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CHAPTER 8

PLANNING FOR DISRUPTIVE TRANSPORT TECHNOLOGIES: HOW PREPARED ARE AUSTRALIAN TRANSPORT AGENCIES?

John Stone, David Ashmore, Jan Scheurer,
Crystal Legacy and Carey Curtis

ABSTRACT

In Australia, corporations are playing an increasing role in the shaping of urban regions through their ability to mobilize capital to support large infrastructure projects and to usurp institutional planning roles which have traditionally been the responsibility of public-sector agencies. The chapter outlines emerging evidence of changes in the roles of corporations in generating ideas and mobilizing political support for their favoured city-shaping projects, and shows that the private sector is embedded in the processes of government, such as planning, in increasingly complex ways. Through 'market-led' or 'unsolicited' proposal evaluation frameworks, corporations can now bring proposals to political leaders in ways

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which go outside traditional planning processes and bypass conventional engagement with civil society.

In this context, we present data from a recent survey of planners in state and national land-use and transport agencies. The survey, conducted through semi-structured interviews, gathered information about the expectations of these organizations in relation to the nature and timing of the deployment of new AV technologies; about the potential implications for achieving environmental and social planning objectives; and about the collective infrastructure investments that AV technologies may require. This work is being used to shape a new research agenda to explore the planning and regulatory frameworks that are needed to ensure that the AV technologies can be deployed in ways that maximize the public good.

Keywords: Autonomous vehicles; transport planning; Australia; governance; regulation

INTRODUCTION

Many of the scenarios for AV deployment frame impacts on urban living in simple dichotomies between dystopian or utopian futures. In this context, Isaac (2016) emphasizes a critical role for governance (as well as regulation and policy) in shaping a future involving AVs. As cities continue to grow, citizens and governments are seeking ways to mitigate the effects of climate change, environmental system collapse and the social consequences of rising inequality. The public purpose of urban planning, as Gleeson and Beza (2014) argue, is to facilitate the design and delivery of collective solutions to these and other urban problems. However, urban research currently fails to offer a coherent framework which brings the potentials of AV technology into dialogue with this conception of urban planning.

In Australia, after three decades under a dominant neoliberal paradigm, we can see a closing of political and institutional minds to the possibility of collective effort, and therefore an existential threat to the practice of urban planning. The private sector has become deeply

1 embedded in many aspects of urban transport and land-use planning
 2 from the funding of major urban toll roads and the operation, through
 3 franchises, of complex suburban rail operations to the management of
 4 land-title records and the privatization of building inspections. As 'pri-
 5 vatized urban monopolies ... control ever larger parts of Australia's
 6 metropolitan estates' (Gleeson, ~~forthcoming~~, p. 183) the capacity for
 7 state agencies to direct the shape of urban development is further hol-
 8 lowed out (Streeck, 2016, p. 72) and corporate ambition is increasingly
 9 fused with state power and resources in what we can call 'corporatized
 10 governance' (Paul, 2016, Ch. 2). This is the context in which planners
 11 in Australian transport and land-use agencies are positioning themselves
 12 to meet the challenges of a possible transformation of urban transport
 13 driven through technological innovation generated by the private
 14 sector.

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15 Even without such constraints, planning in the face of complex change
 16 is a difficult task. Guerra (2016), whose interviews with planners in US
 17 metropolitan planning agencies provided the catalyst for our own project,
 18 lays down a challenge to planners by reminding them of failures to
 19 respond effectively to past technological innovations from the automobile
 20 to the postal service:

23 *Planners may yet again fail to influence the relationship between*
 24 *cities and a new transportation technology by either misunder-*
 25 *standing driverless cars or seeing them as a solution for contem-*
 26 *porary planning problems, such as road congestion or climate*
 27 *change. (p. 211)*

29 Acknowledging this challenge, we support the collective project of
 30 urban planning, if for no better reason than that we believe its laissez-faire
 31 alternative offers little hope of achieving our environmental or social
 32 aspirations for the city survival (see also Chapter 2 in this volume). So, to
 33 shape ^{our} future research and engagement in the future of Australian cities, we
 34 interviewed a small sample of senior staff in Australian transport and
 35 land-use planning agencies to better understand their attitudes to the plan-
 36 ning and regulation of emerging AV technologies. This chapter reports on
 37 the lessons learned in these interviews. We begin by giving some back-
 ground to progress towards AV deployment in Australia and the

environment in which urban planners currently operate as they contemplate the task of managing the driverless city of the future.

AV DEPLOYMENT AND URBAN PLANNING IN AUSTRALIA: THE CURRENT STATE OF PLAY

The closure of large General Motors and Toyota plants in late 2017 marked the end of local car manufacturing in Australia (ABC, 2017a). So, more than ever, the design of the local car fleet will be decided offshore. However, governments of most States within the Australian Commonwealth are actively competing to attract businesses engaged in the development of AV systems, and trials of various types of vehicles are in progress in several cities (ABC, 2017b; Government of Western Australia, 2016). Local and international telecommunications companies are collaborating with universities in trials of out-of-vehicle communications and guidance systems (Premier of Victoria, 2017); and national agencies are working to:

... put end-to-end regulation in place by 2020 to support the safe, commercial deployment and operation of automated vehicles at all levels of automation. (National Transport Commission, 2017)

Australian drivers – the large majority of whom live in the suburbs of the major cities where a car is a virtual necessity for access to urban life – are becoming aware of AV technology through popular media. And, while only a minority now think that they would purchase an AV, half the urban population apparently see AVs as a viable alternative to public transport, if the price was right (ITLS, 2017). These results suggest that international companies wishing to sell AV technologies in Australian cities will eventually need to find ways to persuade initially reluctant drivers to give up control, but that the first fruitful market for these companies might be found in competition with existing public transport services.

The sphere of influence for planners to respond to changes such as AVs has shrunk dramatically in recent decades. We can see this in the example of Victoria, where, as neo-liberalism took hold in the 1990s, the public service was hollowed out and the operation of large metropolitan train

and tram systems was franchised. Thus, the capacity for strategic transport planning was restricted, and even the head of the state planning agency argued that planners were relatively powerless:

... the importance and – even more, the possibility – of the application of conscious choice to city formation is exaggerated.
(Paterson, 2000, pp. 377–386)

And, today, planners in Victoria work in an environment in which regulation is viewed as ‘red tape’: an imposition on business rather than a protection for the public (DTF, 2017a). This mindset has permitted the emergence of new processes that undermine traditional approaches to strategic urban planning. It is now possible to fast-track private-sector proposals that have political support (DTF, 2017b). These processes are being used at a city-shaping scale. For example, a current proposal, now in an advanced stage, will permit construction of a \$AUD 5.5 billion inner-urban toll-road in Melbourne that had not been foreshadowed in any metropolitan strategic plan. If it is completed under current terms, which include mobilization of over \$A 3 billion in private capital, this project would entrench the monopoly position of the highly profitable toll operator. This degree of influence over the use of key parts of the urban road network, combined with a long-term ambition to use its existing tolling technology to roll out electronic road-pricing across the urban road network (Millar & Schneiders, 2016), puts this company in a powerful position to form strategic partnerships with the international developers of AV technologies. These examples illustrate the restricted domain in which Australian planners operate with respect to the private sector and therefore the inherent difficulties that they may face in protecting the public good through the delivery of collective solutions to problems raised in the deployment of AV technologies.

PREPARED FOR WHAT? THE CONTEXT FOR INTERVIEWS WITH AUSTRALIAN PLANNERS

International consideration of the objectives for governance of the deployment of AVs (ITF, 2017a) points to the need for planners and regulators

to evaluate any proposed commercial or public project not only on questions of safety and liability, but also against objectives including:

- reduction of traffic (to foster active travel and mass transit and to support compact urban form);
- reduction of global and local pollutants;
- improvement in accessibility to tackle social inequality.

To avoid the risk of ‘greenwash’, it is also necessary that any claims on these questions be supported by publicly verifiable data (see, for example, discussions within the International Transport Forum (2017b)).

A further issue for planning and regulation of AVs is the desired relationship between the new technologies and existing transit networks. Some transport planners argue that AVs will be more valuable if they are integrated with traditional public transport services, and with cycling and walking, because this allows for a ‘seamless’ experience for users and greater efficiencies for the use of each mode (Lindsay, 2016; UITP, 2017). If AVs are to be deployed in ways that provide lower cost structures or greater operational flexibility to replace or rationalize low-patronage traditional services, then it seems logical that transit planning agencies will need a significant degree of control of the information platforms and payment channels needed to provide new multimodal mobility. This is a task that innovative agencies internationally are already well-placed to perform, building on decades of growth in patronage and increasing political and public support. Transit-planning agencies in German-speaking Europe, in particular, have practical experience of fare and service coordination between public and private transit operators and, more recently, with other mobility services such as car and bike sharing (Goodall et al., 2017; VDV, 2015), but this does not appear to be the case in Australia, where urban transit agencies are only recently emerging from decades of declining patronage and fragile political support (Mees & Groenhart, 2012).

To explore these issues, a series of semi-structured interviews were conducted in March and April 2017 with transport and land-use planners and policymakers. The interviews were framed around the question: how prepared are Australian transport planning agencies for disruptive transport technologies? The question of preparedness in relation to AV technology is obviously made more complex by the uncertainty over the timing and capabilities of any mass market entrant in the field. Guerra (2016), after

surveying US metropolitan planning organizations on their approaches to the introduction of AVs, found that:

... none of the Metropolitan Planning Organizations most likely to be planning for self-driving cars have incorporated them into their most recent Regional Transport Plans. (p. 213)

He concluded that even though planners were closely following the evolution of the new technologies, the absence of AVs in their plans was principally due to uncertainty about the impacts of AVs on road capacity, traffic safety, land use and travel behaviour. Our research aimed to explore the extent to which uncertainty was also influencing the responses of Australian planners to AVs.

Participants for the semi-structured interviews were recruited from state or national transport or planning agencies. Six interviews were conducted, with an agreement to anonymity of agency and city. Key themes, discussed in the next section, were identified through an inductive process by which the most important topics were identified by their frequency and the emphasis given to them by interviewees (Boyatzis, 1998; Braun & Clarke, 2006; Fereday & Muir-Cochrane, 2006).

FINDINGS AND ANALYSIS

Uncertainty Hampering Planning

Guerra (2016) found that planning agencies in the United States appeared to be failing to prepare for the deployment of AVs because, as one respondent put it: ‘We don’t know what ... to do about it. It’s like pondering the imponderable’ (p. 214).

This sentiment was also reflected in our interviews:

The planning cycle and the planning horizons have gone even more crystal ball than they ever were before. It’s very hard to plan in such an environment. If you try and foresee what’s going to happen and try and regulate ahead of the curve, then you are probably going to get something wrong. But then if you leave it too long, then you’ll have outdated regulation. [Interviewee 5]

Respondents felt that getting regulation wrong was a worse problem than having outdated regulation, which could, in theory, be improved upon. So, it was seen as preferable to 'watch and wait' and to maintain dialogue with all parties in the sector, expand and develop the relevant skill and knowledge base within government agencies, and keep the planning process as open as possible.

While uncertainty in relation to the ultimate form of AV deployment and its impact is unavoidable, acknowledgement of uncertainty by planners is not necessarily evidence of unpreparedness. Preparedness might be better gauged by the extent to which planners are working to devise and articulate goals for AVs and to formulate means by which to measure their impact. There was, however, little indication of any push to ^{ward,}~~drive~~ an integrated and purposive agenda. X

Government: Enabler or Prescriber?

The degree to which the purpose of government is to prescribe outcomes or enable the market was a recurrent theme, with the prevailing sentiment being that bureaucrats were neither technological nor procurement specialists. Again, the tactic appeared to be 'watch and wait'. Participants consistently pondered the existential choice between laissez faire and directing the market towards some holistic solution.

... there would need to be a certain level of regulation put in place by government pertaining to safety, but otherwise it would be possible for government to step away and allow self-regulation to take place. [Interviewee 6]

Given the prevailing climate of political and institutional support for the private sector over the public, it is not surprising that interviewees generally accepted that the market be allowed to take things forward with the state taking a light regulatory approach. The exception being safety: there are high hopes that AVs will not only reduce traffic accident rates and severity, but their enormous generation of data will also offer new opportunities to address remaining road safety challenges through regulatory intervention. However, the 'light touch' on questions other than safety is likely to have a significant impact on the evolution of the state planning function. Interviewees, in general, recognized the difference between

waiting to see how a sector evolves before enacting an appropriate regulatory framework and allowing matters to be taken forward by the market in a 'hands-off' manner. Most tended to support the dominant ideological view that the government's role should be as an enabler. The implications of this standpoint are discussed in Chapter 1 of this volume and explored through scenarios in Chapter 9.

Government as a Facilitator of Integrated Supply

Despite the general acceptance of market dominance described in the previous section, some interviewees felt that there was a need to ensure that new modes were integrated into a holistic offering. These respondents suggested that this could be done through a ticketing portal or 'Mobility as Service' application, with coordinated (and possibly subsidized) supply for disadvantaged communities or regional and remote areas (see Chapter 3 for further discussion on the hopes and realities of MaaS). These interviewees felt there was an imperative for the state to prevent supply-side fragmentation, and to manage social dis-benefits:

If (AVs) become part of an overarching public transport network, then what is the regulation guiding that? The policy certainly needs to consider how much is left to an organic market-driven response compared to how much is tied in to a centrally driven public transport service. And what obligations are on the transit authority to have a level of control, to say contract someone to provide a ... subsidised service, what level of regulation is needed for that? [Interviewee 5]

There is a growing focus on engagement ... but ... where the commercial motivators of industry don't always sit well ... I think that government has a role to even the balance ... to ensure that the right outcomes are provided for those less profit-driven areas. [Interviewee 6]

Given current practices, operationalization of this need to provide a social safety net would most likely be achieved through complex contractual relationships with AV suppliers. As the interviewees themselves

1 agreed, the public sector faces a shortfall in the skills required to do this
effectively.

3 The complexity of this question was illustrated by one respondent
who said:

5 *... an on-demand model for buses rather than regular services ...*
7 *would give government an opportunity to re-examine the rela-*
9 *tionship they have with public transport. [Interviewee 4]*

11 This was not meant to imply that governments should retreat from pro-
viding 'marginal' bus services, but rather that the new economies of AVs
13 will require new responses from governments. This was the closest respon-
dents came to acknowledging the need for AVs to operate in ways that
15 strengthen transit systems as an alternative to the private car, as described
earlier.

17 Public Sector Knowledge Gaps

19 Interviewees stressed that in such a specialized area — far more complex
21 than traditional transit — the skills needed to critically appraise the bene-
fits of the new technologies, and how to procure them as part of an inte-
23 grated solution, are underdeveloped:

25 *The capacity of the public sector to understand the drivers that*
27 *motivate private sector behaviour is going to be really important*
29 *... A lot of the expertise is going to be held by the private sector,*
31 *we actually need to build our capacity to be a really informed*
consumer of services and advice (and) when the private sector
holds expertise that the public sector doesn't, it can be very chal-
lenging to drive good ... outcomes. [Interviewee 1]

33 Given the ideological climate in which Australian planners operate, it is
not surprising that some interviewees felt that the public sector generally
35 does not recognize its own power:

37 *I think that the (private sector is) very aware that they need the*
active cooperation of governments ... probably more than we ...
realise that they need this.... [Interviewee 2]

1 This comment acknowledges the reality that, despite the rhetoric, busi-
 3 nesses do not want the removal of all government regulation, but rather
 5 want a predictable environment in which their service can be operated ~~at~~
 7 with consistent returns. It also speaks to the impacts of ‘corporatized
 9 governance’ through which once-clear demarcations of public and private
 11 sector roles in policy development, planning and system operations
 13 and maintenance are being re-organized in response to technological
 15 disruptions.

Fragmentation of Effort

13 Interviewees recognized several lines of fragmentation: between politicians
 15 and planners; between state and national governments; and within the
 17 emerging AV industry itself:

17 *... all policy development requires an authorising environment*
 19 *... As a bureaucracy, we’re limited by the ambitions of our politi-*
 21 *cal masters and their willingness to (explore) innovative areas.*
 23 *[Interviewee 1]*

21 *Clearly, there can be competition for investment and jobs and*
 23 *the like, that’s what governments do. But when it comes to the*
 25 *actual technology, the way it’s being deployed, there’s got to be*
 27 *national consistency. [Interviewee 3]*

27 *There are multiple portals in place and perhaps there could be*
 29 *better governance to establish the links between those portals ~~and~~ ...*
 31 *~~channels~~, and a public description of what each of them is*
 33 *focussed on, but there’s a bit of competitive tension at the*
 35 *moment which isn’t a bad thing. [Interviewee 6]*

31 Respondents’ views on the issues requiring a regulatory framework
 33 covered a broad range, including an imperative to adhere to emerging
 35 global vehicle and technology standards, given the absence of locally man-
 37 ufactured vehicles and the relative isolation from global supply chains.
 The integration agenda, identified as critical in the literature briefly sur-
 veyed in our earlier discussion of the international context for the inter-
 views, was not explicitly recognized as such by most of the respondents.

CONCLUSIONS

The uncertainty about the form of the new technologies that Guerra (2016) found to be causing paralysis of action among metropolitan regional planners in the United States was also found in Australia, but the uncertainty goes further to encompass the almost existential crisis of legitimacy and purpose that Australian planners face after decades of neo-liberal doctrines in planning and governance more generally. So, planning institutions as a whole are more likely to be avoiding some of the more difficult challenges. This is unfortunate as there is only a short time available in which planners will be able to formulate possible policy and regulatory responses before the emergence of commercial proposals for permission to deploy new vehicle technologies and requests for such things as state provision of communications support or preferential access to road space.

The evidence from our interviews suggests that some Australian planners are grappling with these questions, but, outside the questions of safety being pursued by the National Transport Commission, these individuals are only just beginning to articulate the formal and informal processes by which policy and regulation to achieve these outcomes can be created. Further research and engagement is needed to deepen understandings of planners' attitudes and to participate in the development of mechanisms for management of the deployment of AVs. This can be used to open a wider public debate, with all sectors of the AV industry and with civil society, to build consensus around new requirements for planning and regulation.

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