

Institute for Transport Studies

FACULTY OF EARTH AND ENVIRONMENT



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New Mobility Futures – New Governance Options

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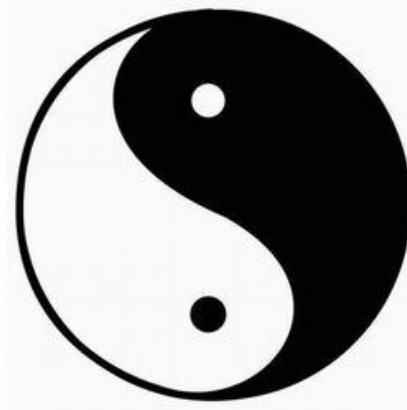
With acknowledgments to Iain Docherty, Louise Reardon
and Jillian Anable

IITS

Key themes



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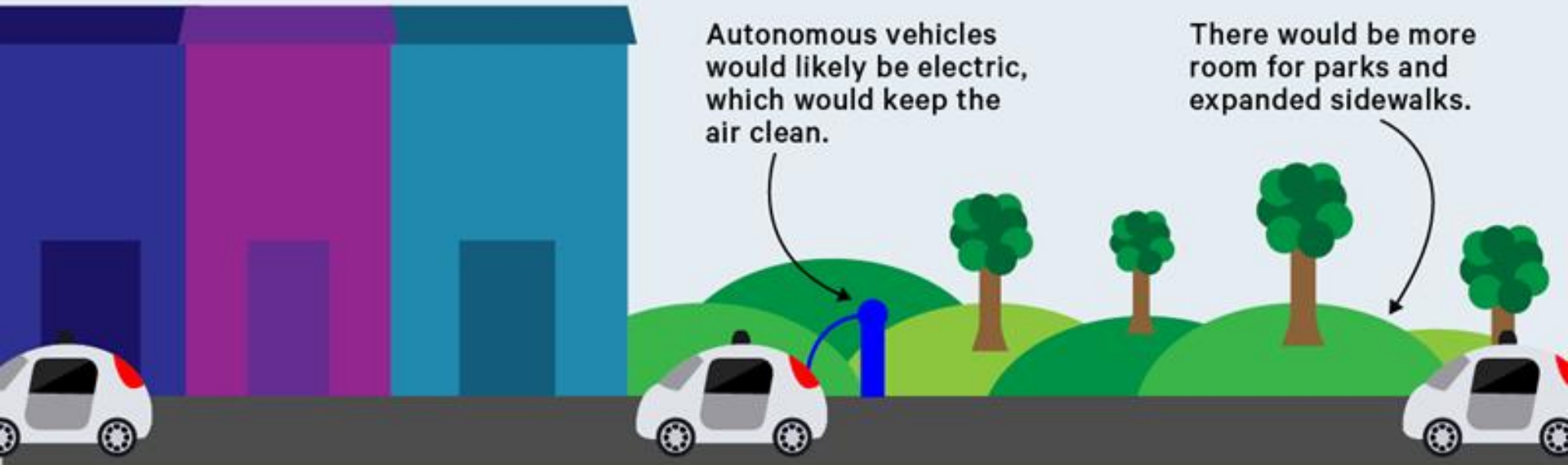
New Mobility Options typically...



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- On demand
- Door-to-door
- 'Clean'
- (Increasingly) autonomous
- Real time pricing
- Used rather than owned
- ... “Mobility as a Service” (MaaS)

WHAT A CITY WITH DRIVERLESS CARS MIGHT LOOK LIKE



Autonomous vehicles would likely be electric, which would keep the air clean.

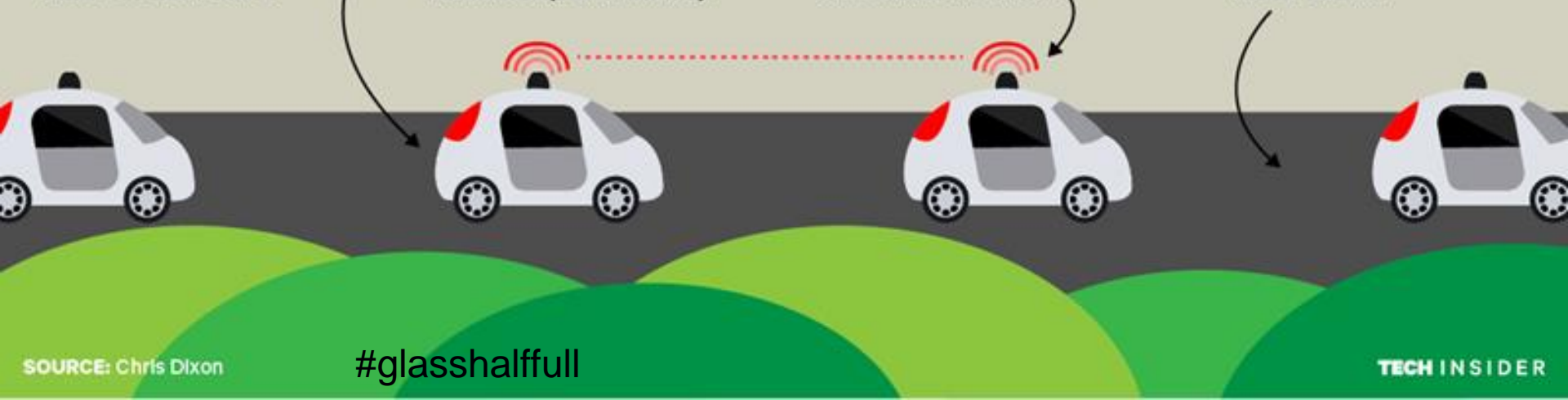
There would be more room for parks and expanded sidewalks.

Parking spaces could be largely removed since people won't need to own cars.

Fewer human drivers would allow driverless cars to work more flawlessly and safely.

Cars will be able to communicate with each other, which would help eliminate traffic.

There would be no street signs because driverless cars don't need them.



Transition in Shared Mobility

- Lisbon simulation
- Improvements in overall access
- Can reduce kms driven



Shared Mobility
Innovation for Liveable Cities

#glasshalfull



Table 6. Summary of main indicators with the variation of the presence of private cars

Aggregate Indicators	0% private cars	20% private cars	40% private cars	60% private cars
Active fleet size (Sh. Taxis + priv. cars)	2.80%	2.6% + (20%)	2.4% + (40%)	2.2% + (60%)
Prices rel. to current (Sh Taxi / Taxi-Bus)	26% / 39%	28% / 41%	30% / 42%	33% / 45%
VKM (weighted) peak-hour	63%	75%	87%	98%
CO2 emissions	66%	75%	86%	97%
% parking space released	97%	77%	58%	38%

But beware the hype cycle



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#glasshalfempty

- Limited evidence of widespread increase in sharing
- Autonomous will happen first in own cars at L4 for inter-urban driving
- There will not just be substitution of trips
- Some of the governance assumptions are optimistic

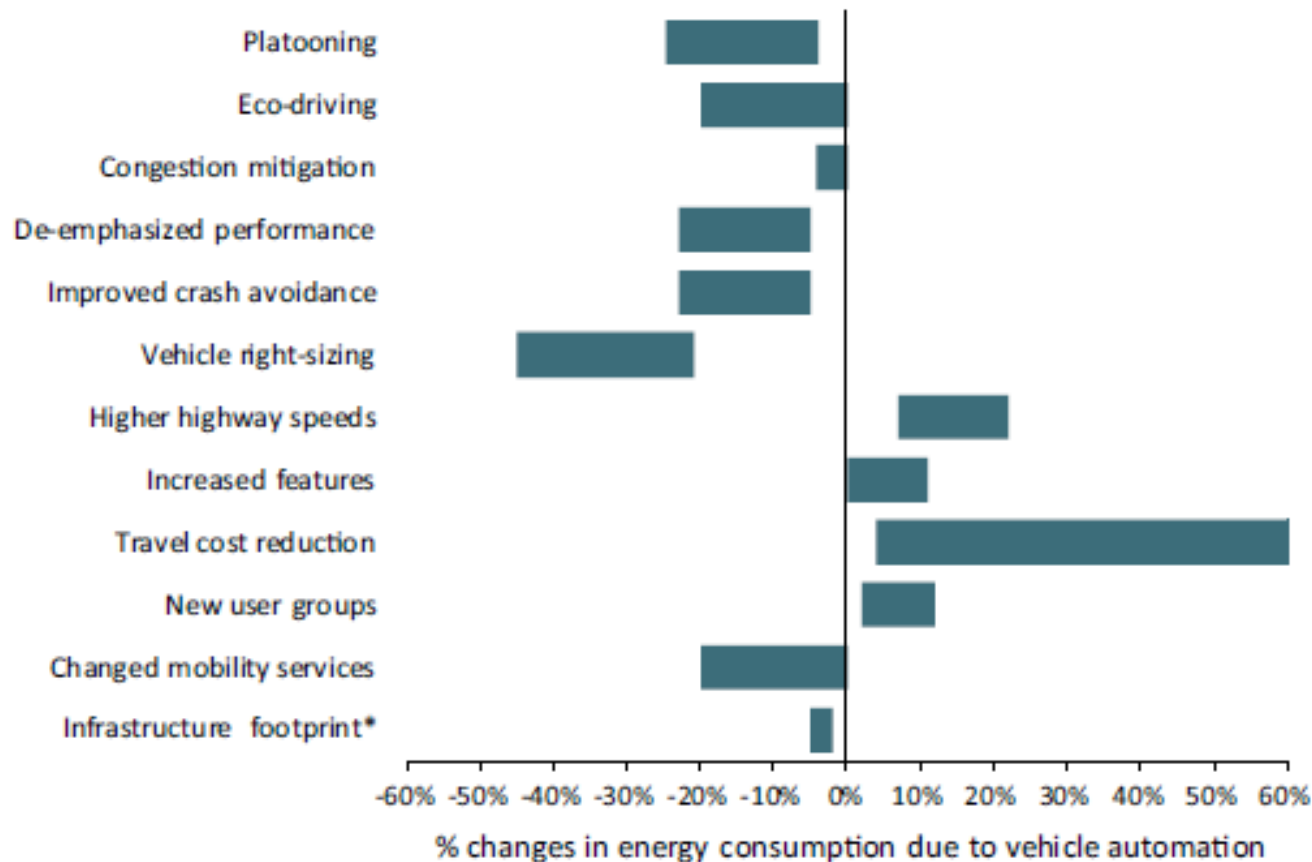
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Wadud, Z, MacKenzie, D and Leiby, P (2016) Help or hindrance? The travel, energy and carbon impact of highly automated vehicles. *Transportation Research Part A: Policy and Practice*, 86. pp. 1-18



Why are new mobility actors interested?



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- A \$1.5 trillion per annum (by 2025) question...
- New actors want *more*, not less mobility
 - Yet the transport policy orthodoxy on smart mobility is about 'efficiency'... this is, to put it politely, naive
 - Control... over your time and choices
- Oligopolistic/monopolistic power
- High rents (that's what dominant actors do)

How is governance disrupted?



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- Gives voice to *USERS*
- Massive shift in who knows what about mobility
- New network of actors (inc. peer to peer & aggregators)
- Business models of existing providers
- The relationship between the traveller – the provider – the state
- How transport is paid for

What stays the same?



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1. Setting overall direction of policy

1. Environmental, economic and social externalities exist
2. Coordination of transport, land-use and economic goals
3. Setting standards and communicating with public about transport system operation
4. Balancing the needs of different transport systems and users

2. Addressing Market Failures

1. Conditions for a free market do not exist
2. Acting as a provider or procurer of services which are not profitable
3. Problems of co-ordination between modes exist
4. Basic standards of operation and rules of movement



What stays the same?



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3. Investment as policy

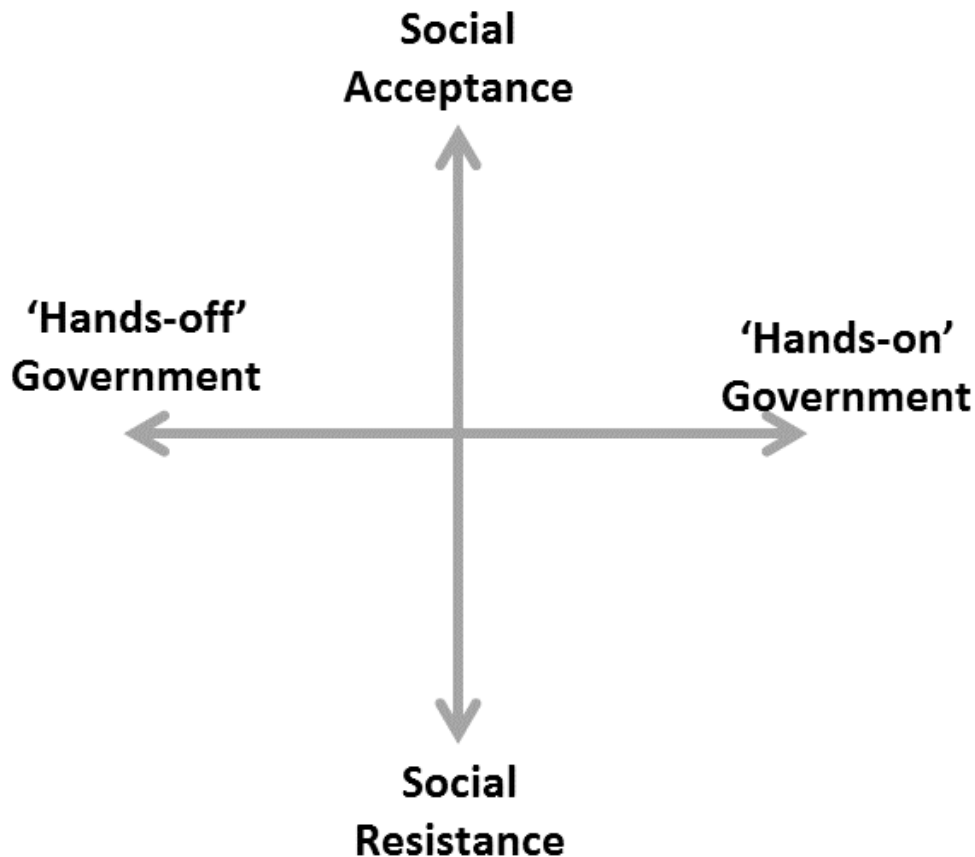
1. Funding the provision and upkeep of infrastructure
2. Supporting the adoption of transport innovations
3. The state is an aggregator of risk and has primary accountability



- No amount of smart technology or big data will overcome the need for good policy, planning & governance
- We need to plan proactively to try to ensure socially-desirable outcomes from Smart Mobility

“The idea of the enabling state suggests that the role of the state is confined to stimulating others to action and then letting them get on with it. The ensuring state is an enabling state, but one that is expected or obligated to make sure such processes achieve certain defined outcomes”.

(Giddens, 2008: 9).



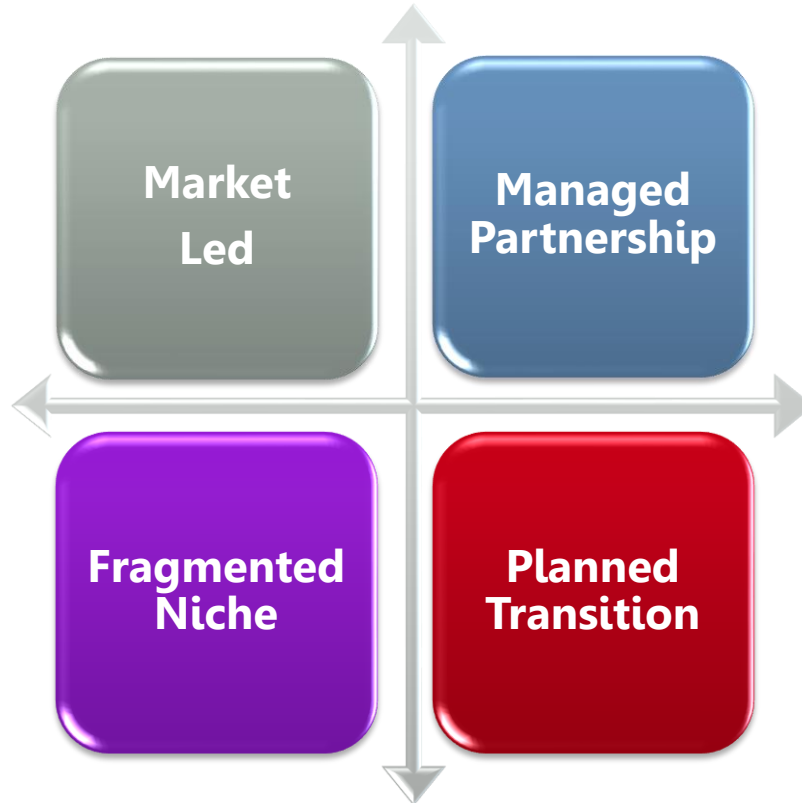
‘Hands on’ vs. ‘Hands-off’
Capacity and will to exercise range of tools of governance (regulation, taxation, coordination)

Social Acceptance vs. Resistance
Acceptance of data sharing, merged data services and automation in various forms

Four Scenarios



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2035

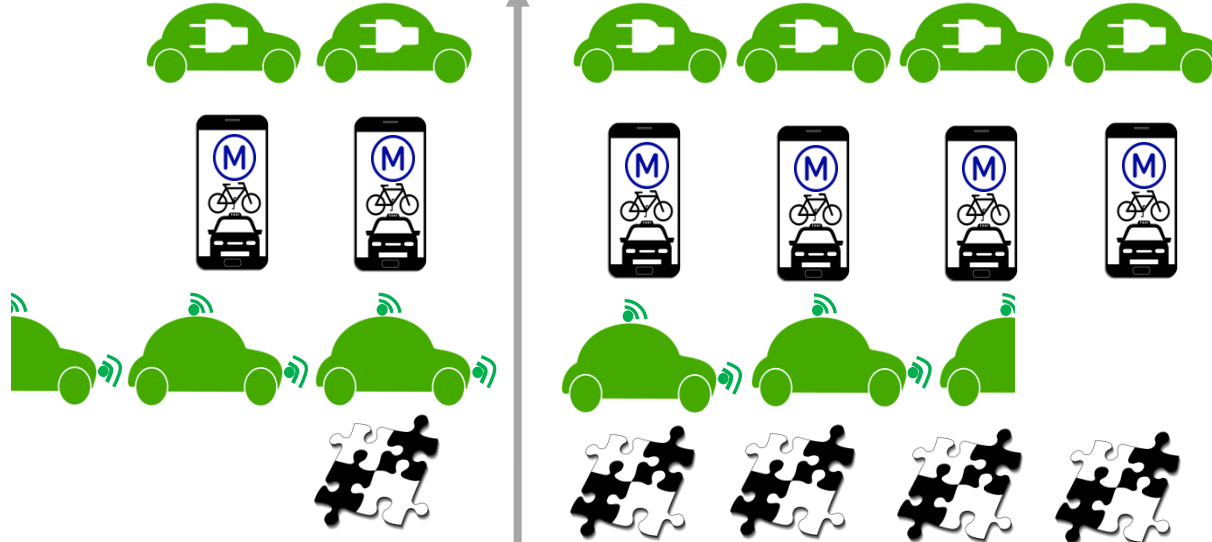
Responses



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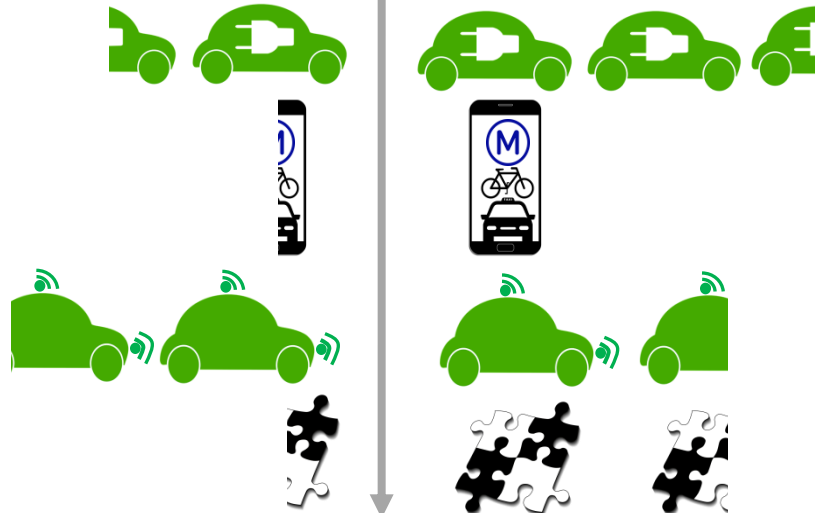


**Social
Acceptance**



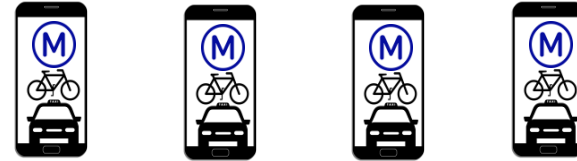
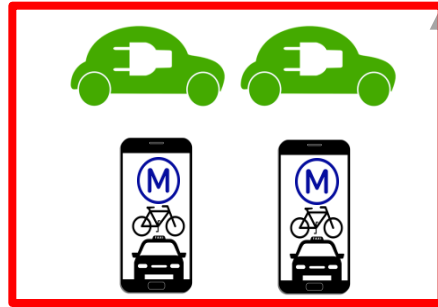
**'Hands Off'
Government**

**'Hands On'
Government**

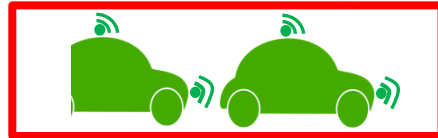


**Social
Resistance**

**Social
Acceptance**



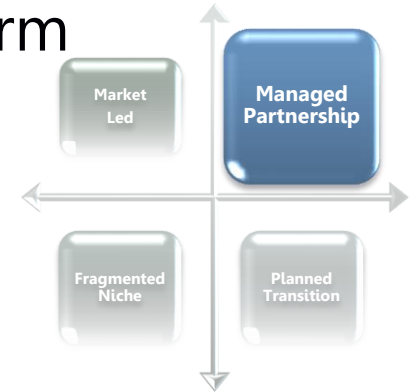
**'Hands Off'
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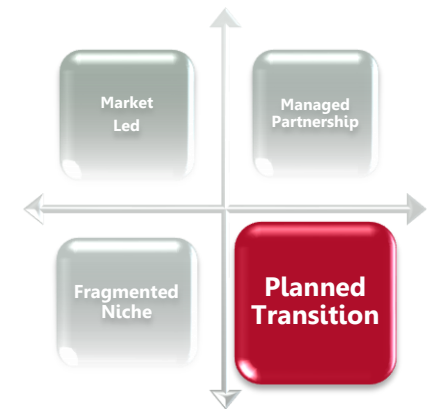
**'Hands On'
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**Social
Resistance**

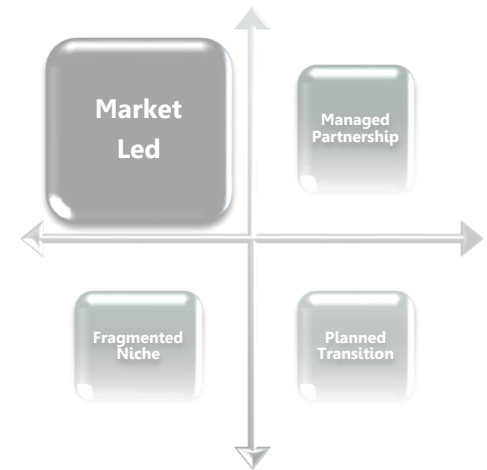
- Pricing co-ordination, integration and reform
- Anticipatory regulation and active piloting
- Socially necessary provision assured
- Blurring of public and private transport
 - Managed decline of some existing services
 - Corridor services innovate and remain important
- Disagreement on EV rollout depending on start point
- Will greater sharing and integration diminish AV rollout?
- Inner vs. outer and rural area concerns persist



- Individualised services
- Access to packages of services
- Mixed views to extent this creates pressure to integrate
- Division between private and public remains
- Rural will become more car dependent
- Industry and retail will adopt automation



- Competition between cities
- Strong proprietary system development
- More limited integration across products
- Decline in traditional public transport
- Leads to differentials across space
 - Some user groups disadvantaged
 - Some areas (rural, sub and peri-urban)
- Significant individual AV and EV adoption
- Failure to tackle pricing & limited coordination results in congestion

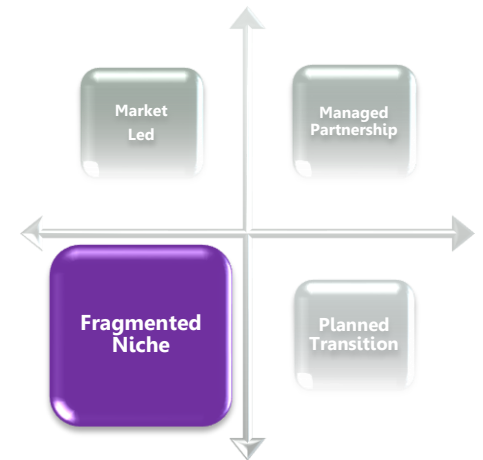


Fragmented Niche



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- Lack of support and government commitment stifles innovation
- Some places have a market but commercially driven
- Decline in traditional services under reduced funding
- Rise in individualised AVs and EVs but more limited to higher earners
- May generate incentives to promote more localised lifestyles, walking and cycling
- Freight and retail innovation continues although more innovative final mile solutions are limited in application





Who/what
are the
(potential)
winners and
losers?

State capacity
and
governance
arrangements

Proactive or
Reactive
Governance

Concluding Comments 1/2



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- Clear planning goals fundamental
 - Outcomes not systems
 - Definitional barriers
- Ask whether these innovations will make things better?
 - Determine the conditions in which they will and wont
- Ask whether these innovations can overcome known barriers?
 - E.g. In a MaaS world is competition between buses an issue?
- Understand long-term implications of short-run decisions
 - Experiment, share and learn
 - Beware fragmentation of regulatory environment
- Public sector remains important in shaping public opinion || T S



- How streets are used is critical part of public policy
 - Manage this well!
- Address the winners and losers questions
 - Do changes in the mobility system narrow gaps?
 - What changes would be necessary to make that happen?
- Open up access to data
 - Insist on some element of data sharing
- Think about new opportunities around future of pricing
 - If not, what will fund transport in the decades to come?
 - How will the demand for mobility be managed and by who?