

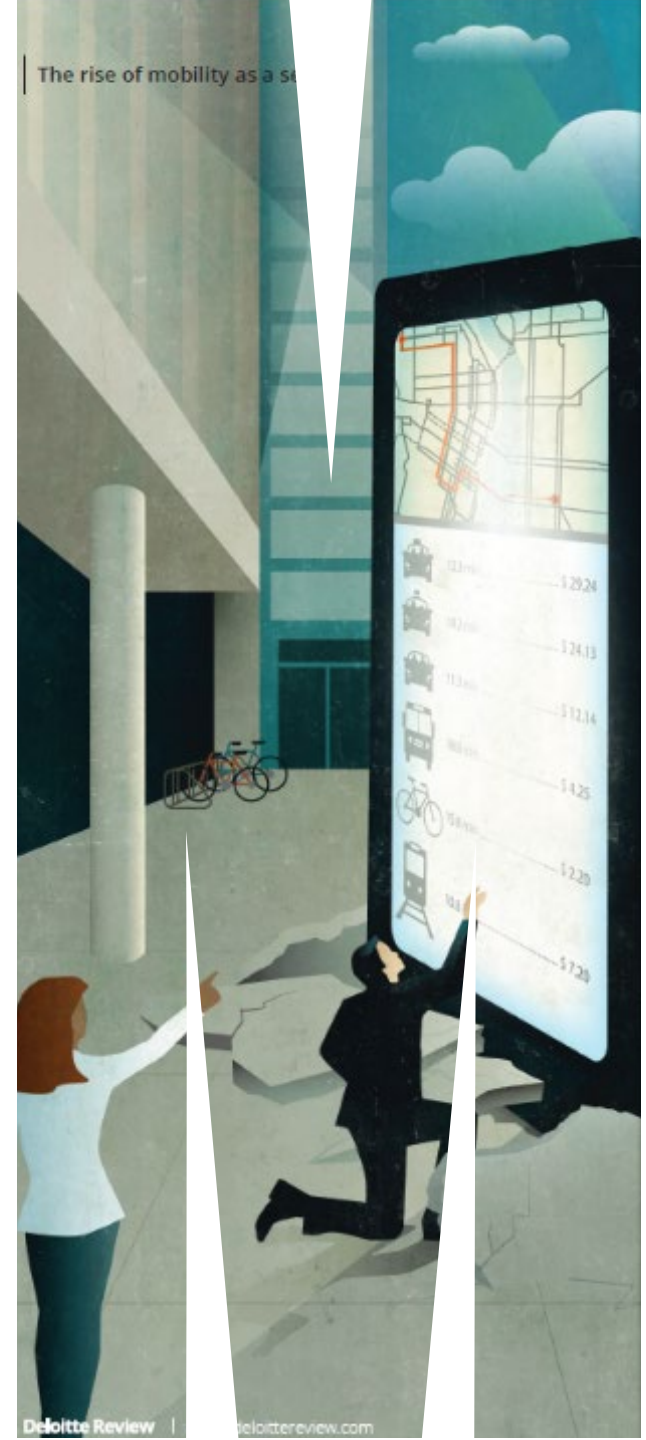
Tuesday 24th July 5:00p.m. to 6:30p.m.

Transport Australia Society
Engineers Australia
Level 31, 600 Bourke Street
Melbourne , Victoria , 3000

Learning from International Practice - MaaS can it deliver on the hype?

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Public Transport Research Group
Monash Institute of Transport Studies
Monash University

Assistance of Dr Katerina Pavkova of PTRG



Introduction

MaaS Why/What

The Transport Problem in Cities

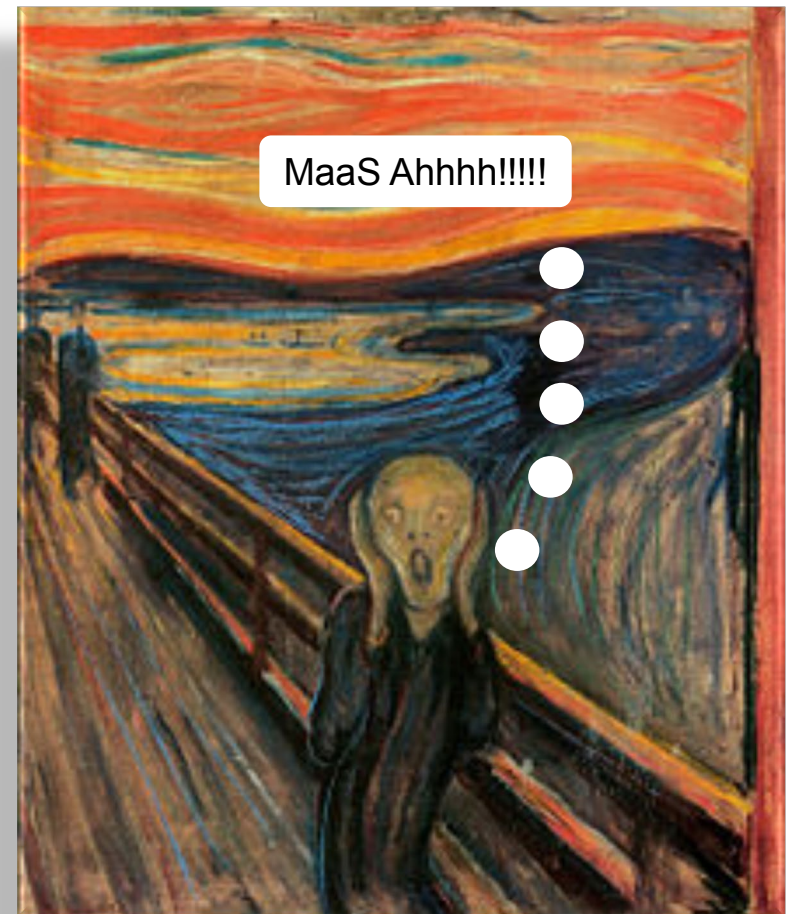
MaaS Critiques

What I Think

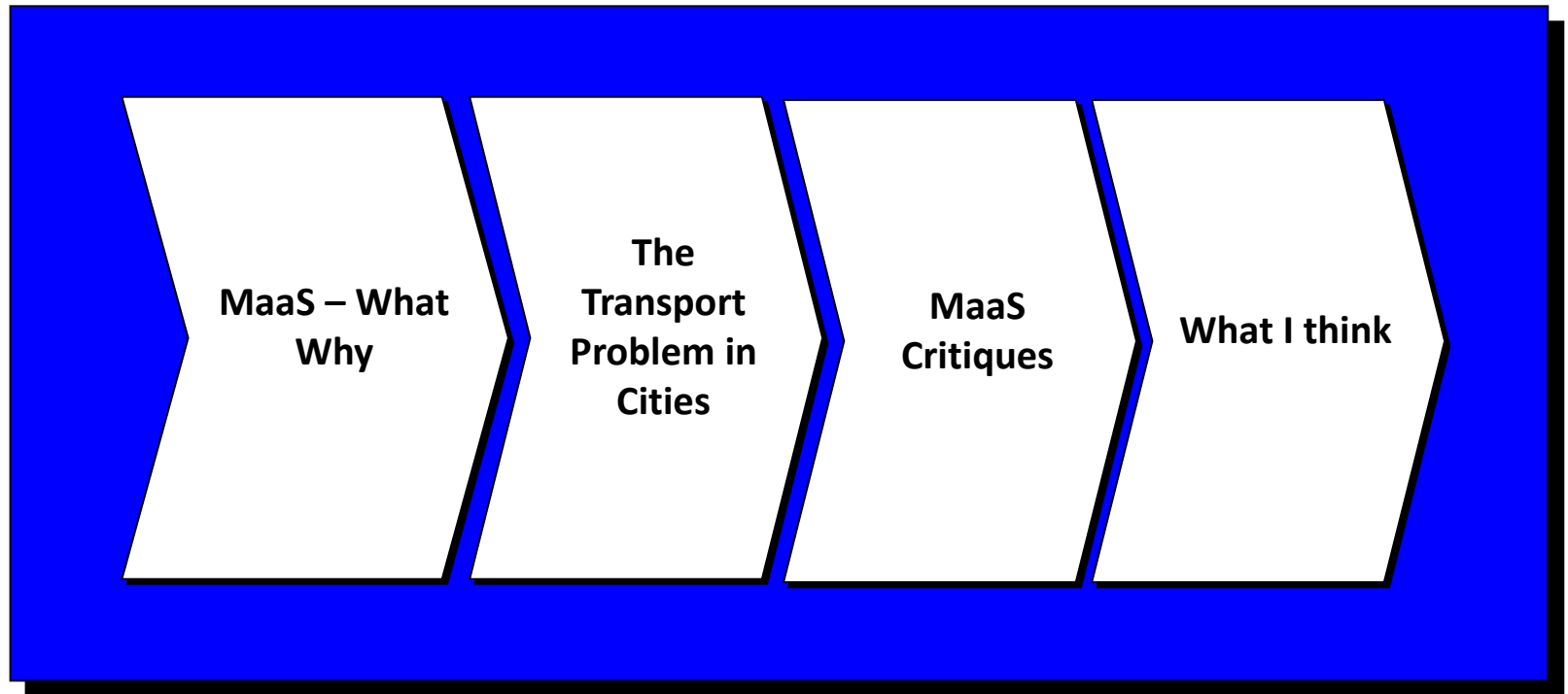


This is a critical assessment of MaaS – but im looking for evidence not opinions

- I quite like the idea of MaaS
- BUT have been asked (by TAS) to explore the idea from a critical perspective
- Avoid:
 - Grumpy old guy thing
 - Current research on lies and hype of AV's and new mobility
- Emphasise:
 - What we do and don't know
- Truth is – we don't really know yet - so this is more a question raising session than a 'slagging MaaS off thing'



...and is structured as follows



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Whats MaaS?



Whats MaaS

- Unified mobility “gateway” (website or smartphone app)
 - Multimodal trip choice journey planning
 - All modes (PT, carshare/club, taxi, TNCs, car hire, bikeshare)
- Unified trip payment model: single account
 - Pay as you go
 - Monthly subscription
- Goods and personal travel planning integrated

MaaS Benefits

- Greater choice, easier access, ease of use, better user focus, better modal integration
- ? reduced costs, improved transport utilisation, improve network efficiency, reduce congestion
- ?less car ownership ?more transit use

Whats MaaS?

Whats MaaS

- Henshers 3 B's
Bundles
 Buy bundles of mobility/ Volume of access

Budgets

Based on end user preferences, move from low marginal cost travel (car ownership) to packages of travel

Brokers

New entrants to mobility (Google?)

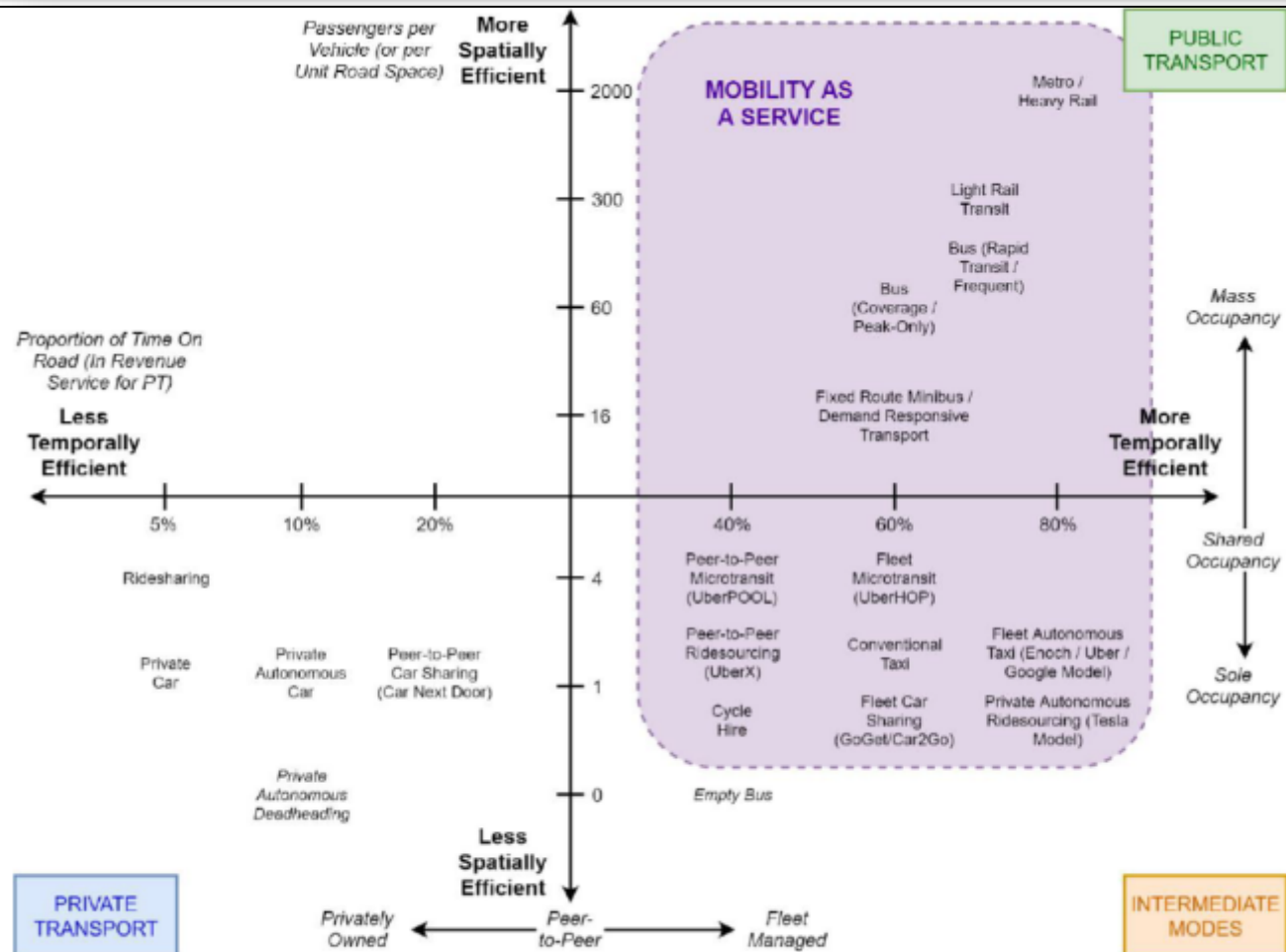


Figure 1: The modal efficiency framework situating public, private and intermediate modes with respect to their spatial and temporal efficiencies—mobility as a service (MaaS), to be introduced in Section 9, offers an integrative solution bringing together temporally efficient modes across a range of spatial efficiencies

Source: Yale Z Wong, David A Hensher and Corinne Mulley (2018) Emerging transport technologies and the modal efficiency framework: A case for mobility as a service (MaaS)
 WORKING PAPER, ITLS-WP-18-04 Institute of Transport and Logistics Studies (ITLS), The University of Sydney Business School

Whats MaaS?

Table 2. Summary of MaaS schemes.

Scheme	Area	Integration Type*				Modes
		1	2	3	4	
STIB+Cambio	Brussels	X				car-sharing, rail, urban public transport, taxi
Qixxit	Germany			X		bike-sharing, car-sharing, car rental, rail, urban public transport, taxi + flight, coach
Moovel	Germany		X	X		bike-sharing, car-sharing, car rental, rail, urban public transport, taxi
Switchh	Hamburg	X		X		bike-sharing, car-sharing, car rental, rail, urban public transport, taxi + ferry
Hannovermobil	Hannover	X	X	X		car-sharing, car rental, rail, urban public transport, taxi
EMMA	Montpellier	X	X	X		bike-sharing, car-sharing, rail, urban public transport
Mobility Mixx	Netherlands	X	X	X		bike-sharing, car-sharing, car rental, rail, urban public transport, taxi
NS-Business Card	Netherlands	X	X	X		bike-sharing, car rental, rail, urban public transport, taxi
Radiuz Total Mobility	Netherlands	X	X	X		bike-sharing, car-sharing, car rental, rail, urban public transport, taxi
Smile**	Vienna	X	X	X		bike-sharing, car-sharing, car rental, rail, urban public transport, taxi
Optimod' Lyon**	Lyon	X	X	X		bike-sharing, car-sharing, car rental, rail, urban public transport, taxi + flight, freight transport
BeMobility**	Berlin	X	X	X		bike-sharing, car-sharing, rail, urban public transport, taxi
SHIFT	Las Vegas	X	X	X	X	bike-sharing, car-sharing, car rental, urban public transport
UbiGo	Gothenburg	X	X	X	X	bike-sharing, car-sharing, car rental, urban public transport
Helsinki Model**	Helsinki	X	X	X	X	bike-sharing, car-sharing, car rental, rail, urban public transport, taxi + on demand transport

*1: Ticket integration, 2: Payment integration, 3: ICT integration, 4: Mobility package integration **In research phase

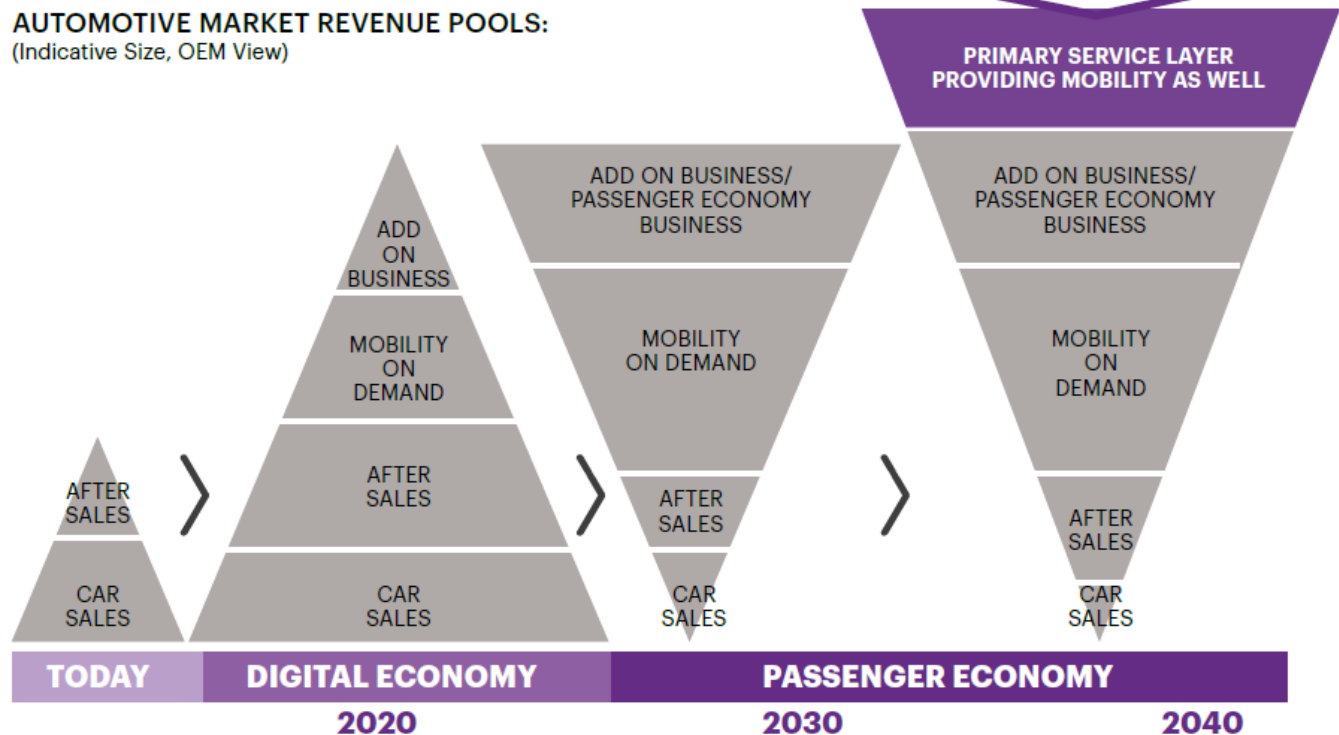
Source: 2016, Maria Kamargianni, Weibo Li, Melinda Matyas, Andreas Schäfer "A Critical Review of New Mobility Services for Urban Transport" Transport procedure 14 2016 18-21

Whats MaaS?

FIGURE 4

The new value chain

AUTOMOTIVE MARKET REVENUE POOLS:
(Indicative Size, OEM View)



Source: Accenture

Source: Accenture "Mobility as a service" – Mapping a route towards future success in the new automotive ecosystem"

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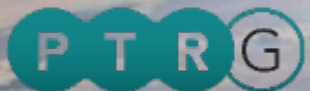
What I Think





MONASH
University

2007



**PUBLIC TRANSPORT
RESEARCH GROUP**

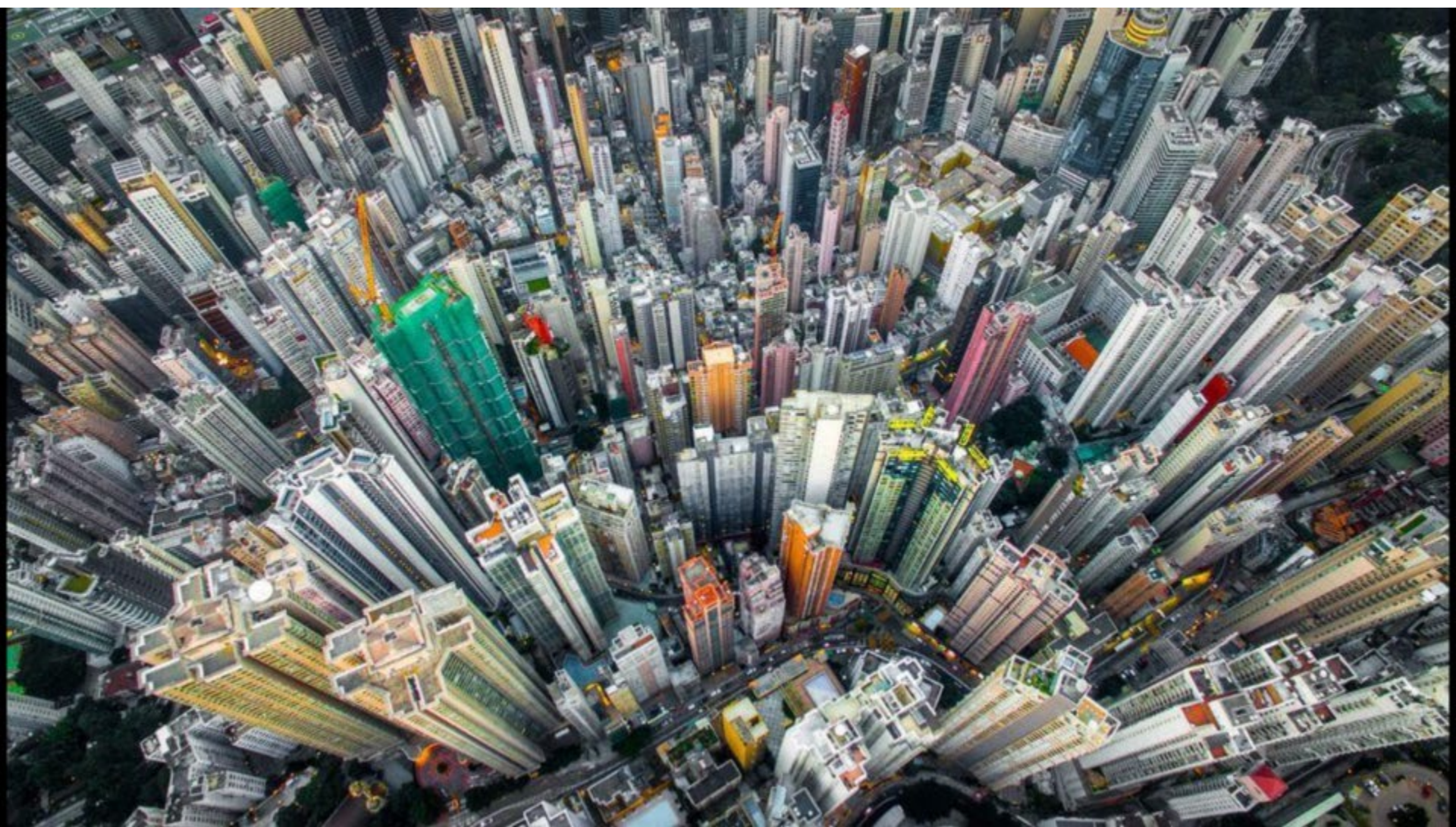


GROUP
OF EIGHT
AUSTRALIA

MONASH
INSTITUTE OF
TRANSPORT
STUDIES

2030

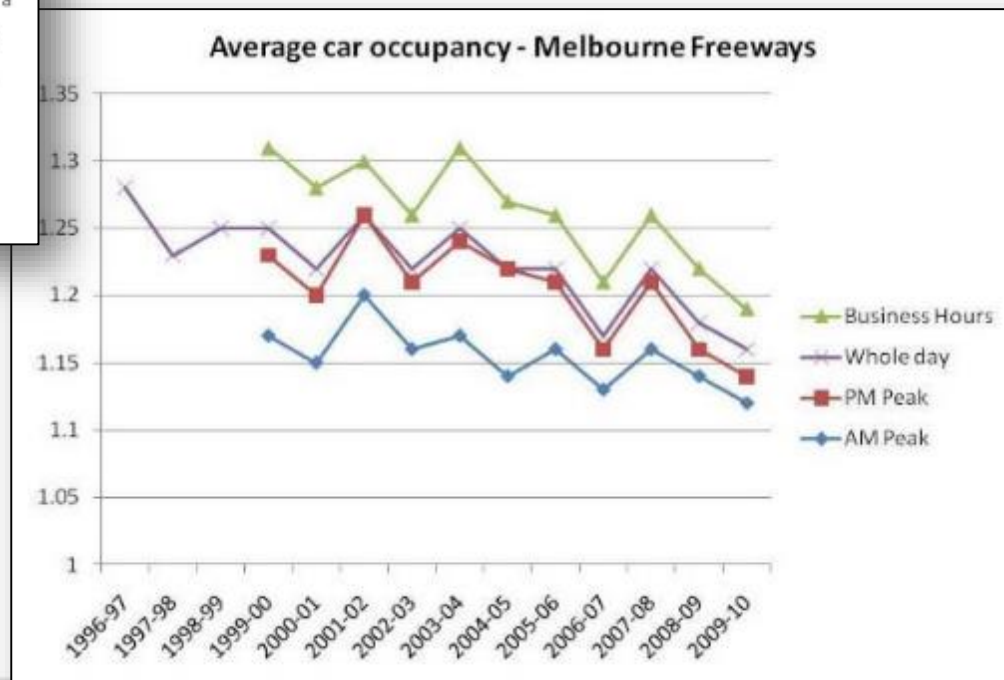
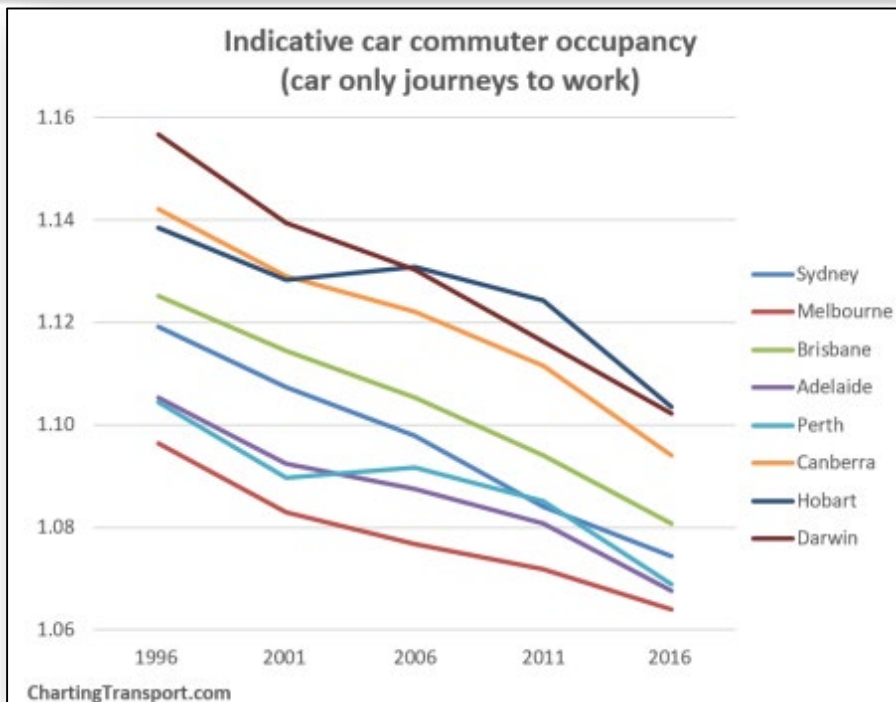
Cities; humanities future



Traffic is in an inefficient solution for travel in growing cities - Are Driverless cars a solution or more of the same problem?



We have a vehicle shared occupancy crisis.....



Source: Charting Transport (2017)

...which “Ride Sharing” doesn’t solve

- Uber assumed to have the same occupancy as Taxi at 1.66 per vehicle (including the driver)

- Source: San Francisco County Transportation Authority (2017) ‘TNC’s Today’



It isn't much
in the way of
sharing

- CarShare – average vehicle occupancy is 1.44 (including the driver)

- Source: Cervero, R Golub A and Nee B (2007) ‘San Francisco City CarShare: Longer-Term Travel-Demand and Car Ownership Impacts’ Institute of Urban and Regional Development University of California at Berkeley



Slightly better
than
Melbourne
traffic but
known to
have positive
impacts in
reducing car
ownership

Mass Transit=Efficiency and Volume

To carry 50,000 people per hour per direction, you need:

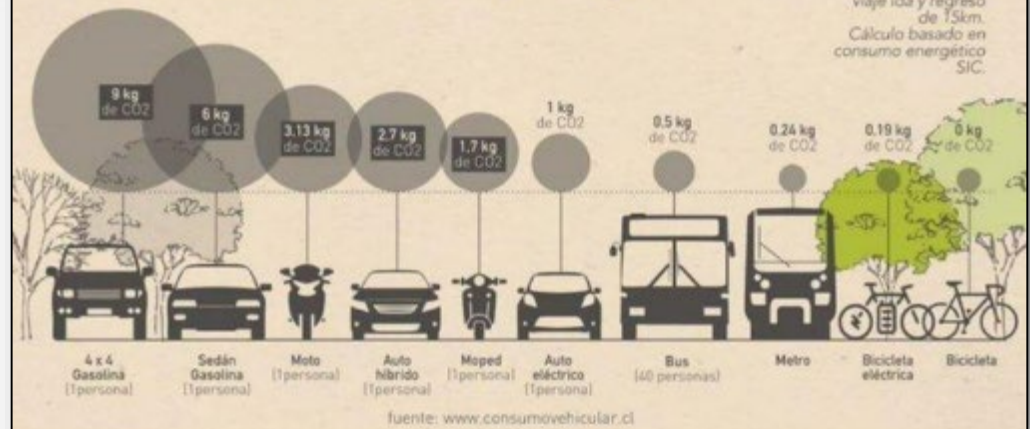
a 175m wide road used only by car

a 35m wide road used only by buses

a 9m wide railway track bed for metro

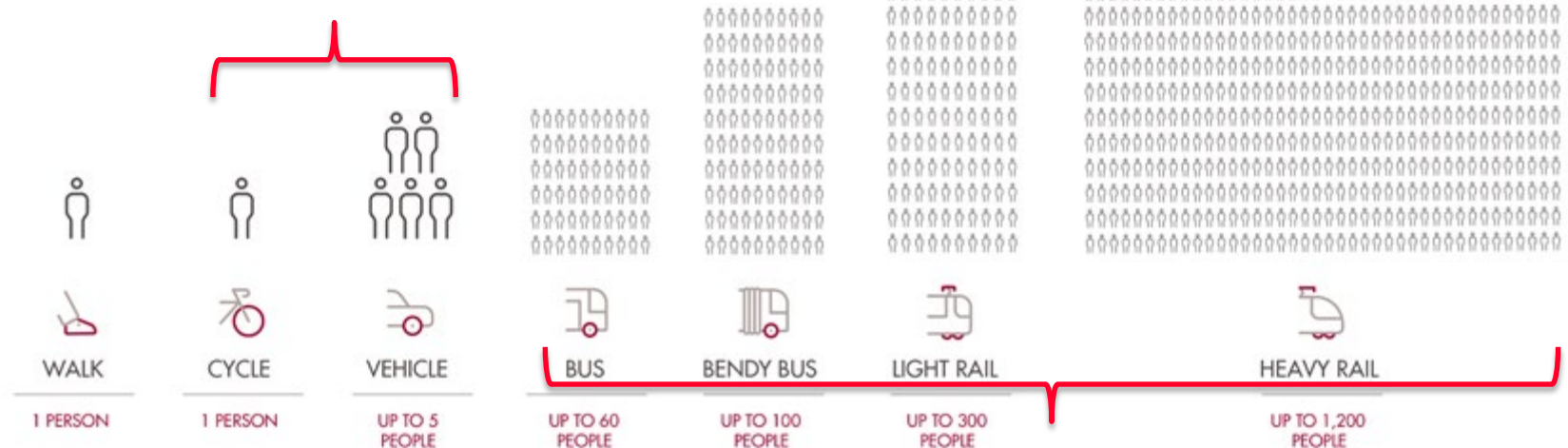
Comparación de emisiones por viaje*

Calculo basado en viaje ida y regreso de 15km.
Cálculo basado en consumo energético SIC.



Public Transport is the most efficient form of SHARED occupancy

This is **NOT**
'SHARED
MOBILITY'



Source: Transport for NSW²³

This **IS** 'SHARED MOBILITY'

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MaaS Why/What

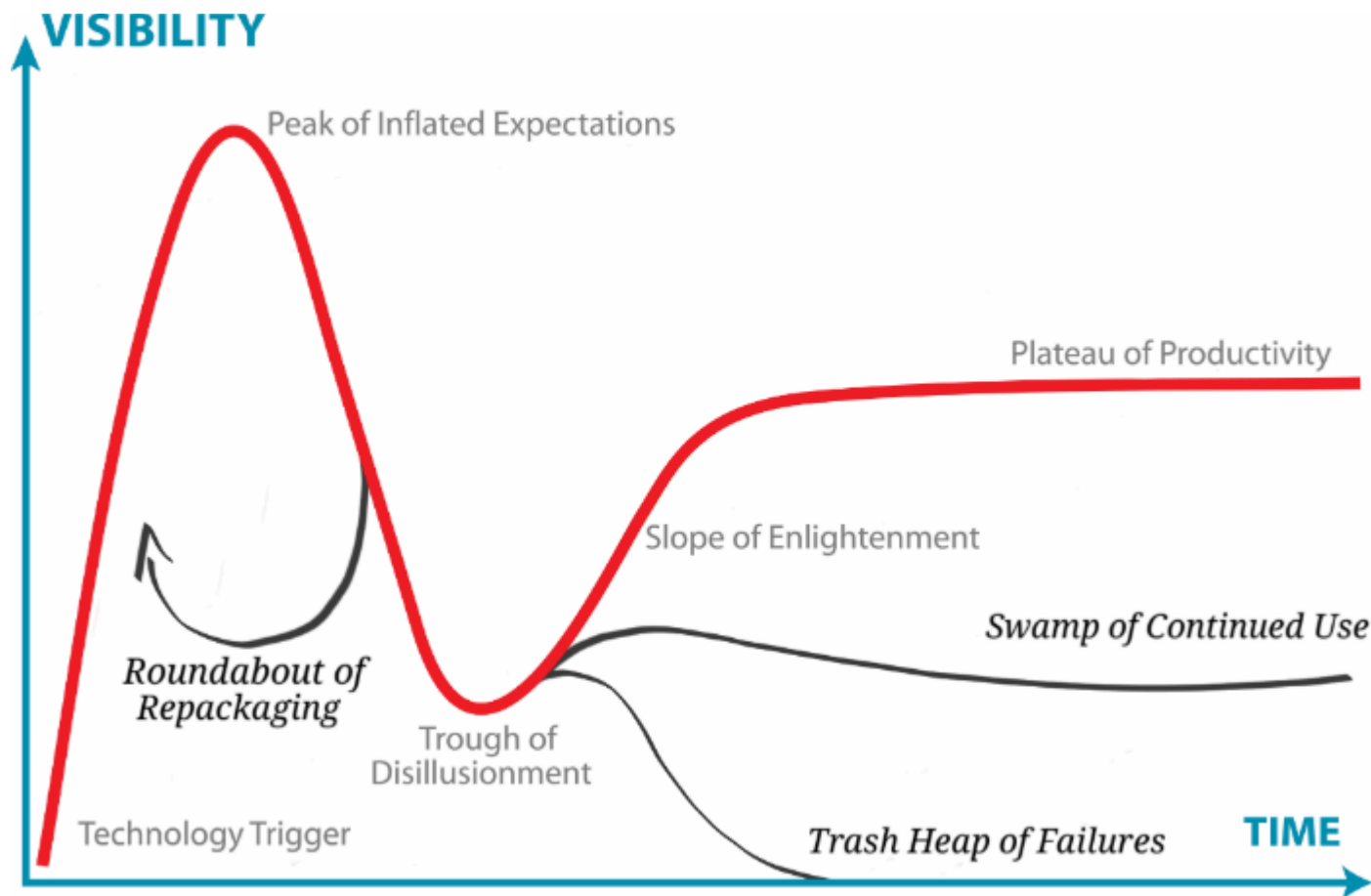
The Transport Problem in Cities

MaaS Critiques

What I Think



Technology development and the HYPE CURVE – where is MaaS?



McCabe – is MaaS a Fraud?

MaaS – is it a Fraud?

- “The MaaS pitch is as simple as FREEDOM. Go where you want, when you want cheaply - cheaper than public transport (some estimates). Does this sound familiar? It should. This is the mantra of the car industry in the 1940's onwards to now.”
- “MaaS is a more of Business As Usual being perpetrated on governments and transport agencies under the guise of freedom to move where you want when you want.”
- -aMaaS – autonomous cars and MaaS
 - “aMaaS is destructive without Road User Charging”

Much of the critique is about AV's and wasteful shared mobility modes



Source: Graham McCabe (2017) "Why Mobility as a Service is a 'fraud' and autonomous vehicles are not a panacea" AITPM working paper

EU Polis Review – Some Warnings



MaaS – Disincentivising Sustainable Trips

- Many NEW mobility services emphasise single occupancy car travel over PT use
- General POOR VISIBILITY of Public Transport in MaaS Applications
 - Example: One MaaS subscriber service sets number of taxi/car share trips a month; if you haven't used them you pay anyway – so users make travel by SOV because they paid for it anyway

MaaS – Higher Costs, Unequal Service

- Commercial imperatives – where do PT fare subsidies fit? Do concession fares apply?

MaaS – Lost Authority to User Links

- Does user interact more with MaaS provider or Transport planning authority?

it may happen that MaaS increases inequality where premium levels of service are on offer to those who pay more

Future of Urban Mobility report



Key Conclusions

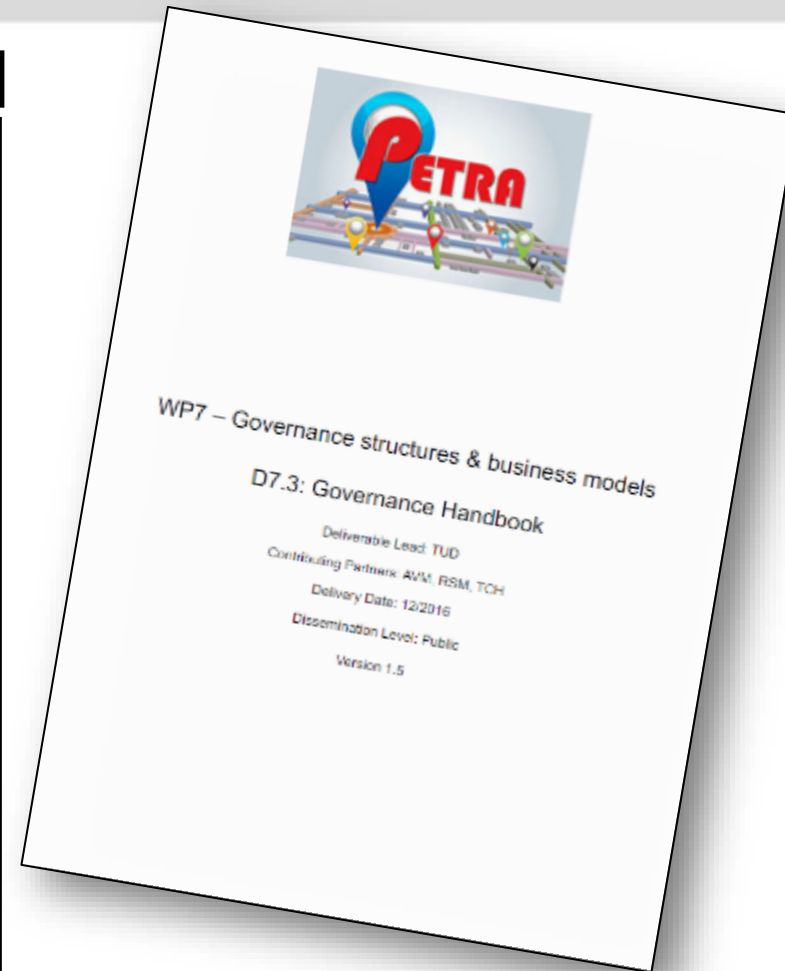
- overall **collaboration on mobility solutions is rare** and further, that decisions
“... do not sufficiently address interfaces with the private sector and what contribution it could make to the achievement of urban mobility goals”.

The EU PETRA review – interesting points

PETRA – Selected Points

- Tension – Global players and local interests
- Giving customers choice requires trade-offs – WHO should make those trade-offs?
- The Frankenstein Trap – proper operationalization of public values – who makes these and why isn't the public involved; it's a governance risk
- Nudging in the Public Interest – needs strong political support and can't be done by commercial players; it's about transport policy not flogging an app
- Where do all the conflicts go? MaaS is a solution to transport conflicts but can also generate new conflicts; what happens to them?
- Outsourcing MaaS is the norm; risks are keeping control when you don't have it; accountability on trade-offs and values like privacy, sustainability and efficiency
- "Optimism Bias" Tech developments have optimism; will new systems solve old problems without effort? There is no such thing as a free lunch

Source: Wijnand Veeneman, TU Delft



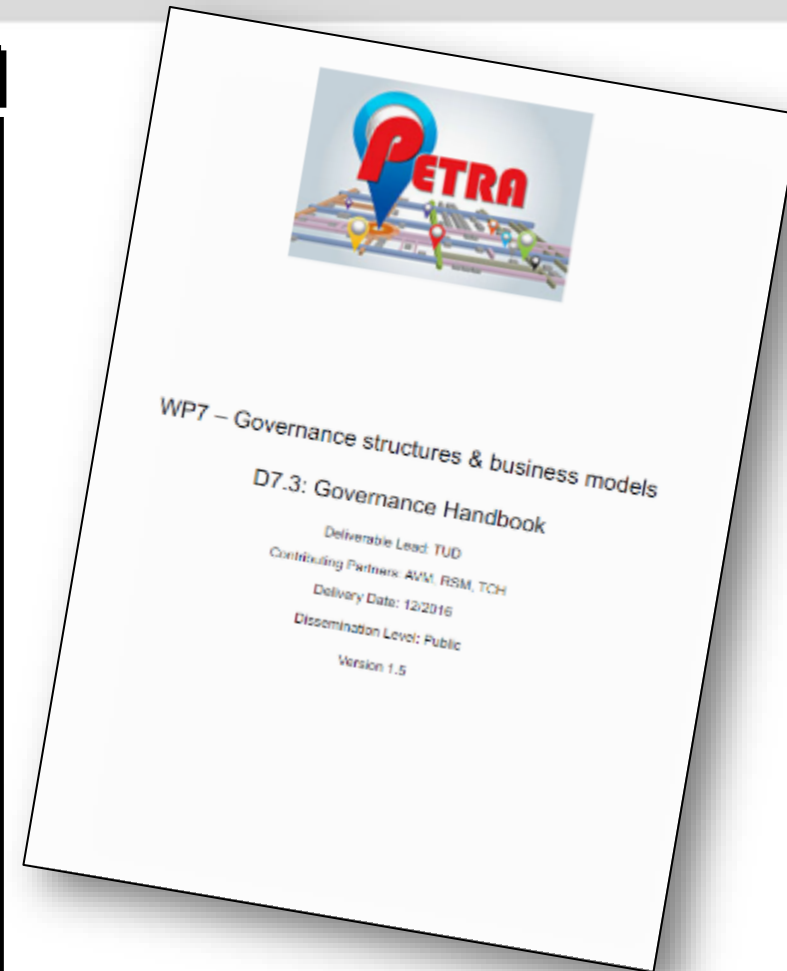
PETRA – Personal Transport Advisor: an integrated platform of mobility patterns for Smart Cities to enable demand-adaptive transportation systems

The EU PETRA review – interesting points

PETRA – Selected Points - Veeneman

- overlaying MaaS over existing services is problematic :
 - different incentive structures, governance space and lack of standard data interfaces
- MaaS implementation needs strong support of governments and operators and a local presence.
- MaaS potential integration as the key theme on three topics:
 - Travel (planning and reservation), Transaction (identification and payment) Tailoring (packaging and best-price advice).
 - Good integration on planning (although it could be more multi-modal) and transaction (with personalised Myki/OV-Chipkaart systems).
 - Packaging, reservation and best-price advice is to be developed.
- In addition, the (mathematical) complexity of real-time multimodal planning and the (organisational) complexity of real-time reservations, identification and payment, probably makes the vision unrealistic for now.
- So for short, the big vision for specific narrow MaaS, neh, we think not at least not yet. The wider perspective of improved integration, yes, probably in close cooperation between public authorities (holding many of the relevant cards and operators and data driven platform companies).

Source: Wijnand Veeneman, TU Delft



PETRA – Personal Transport Advisor: an integrated platform of mobility patterns for Smart Cities to enable demand-adaptive transportation systems

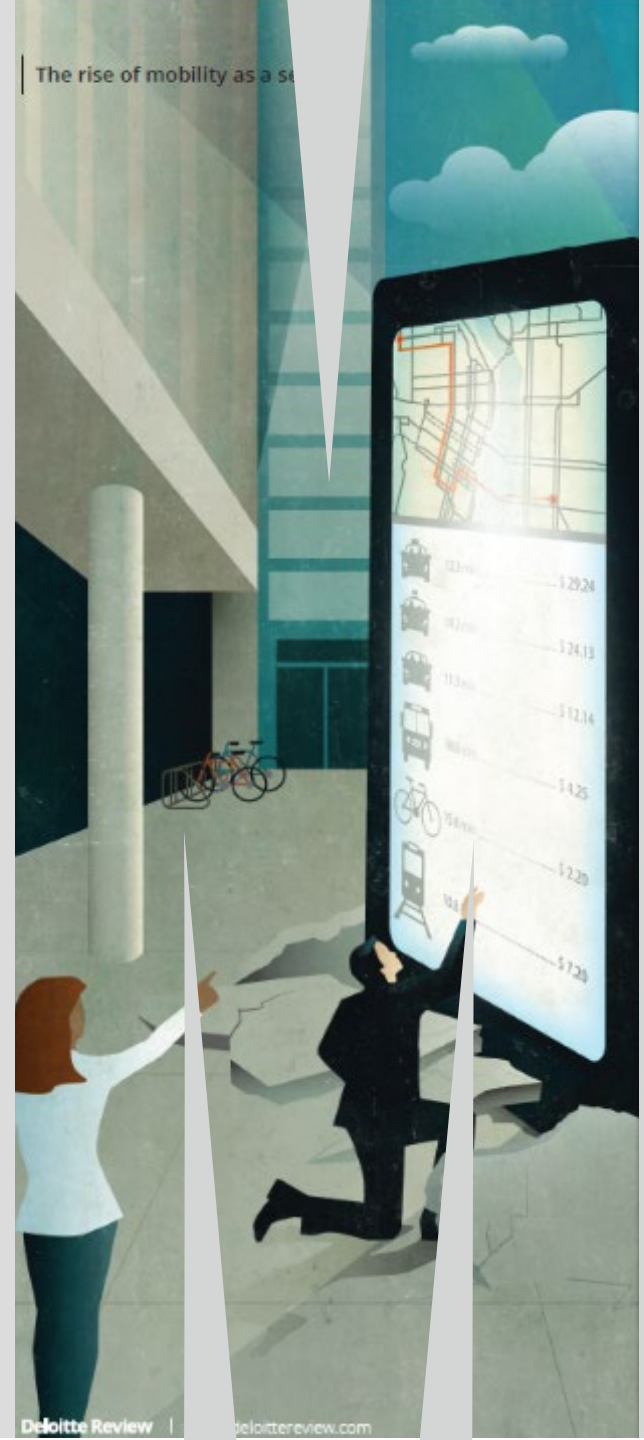
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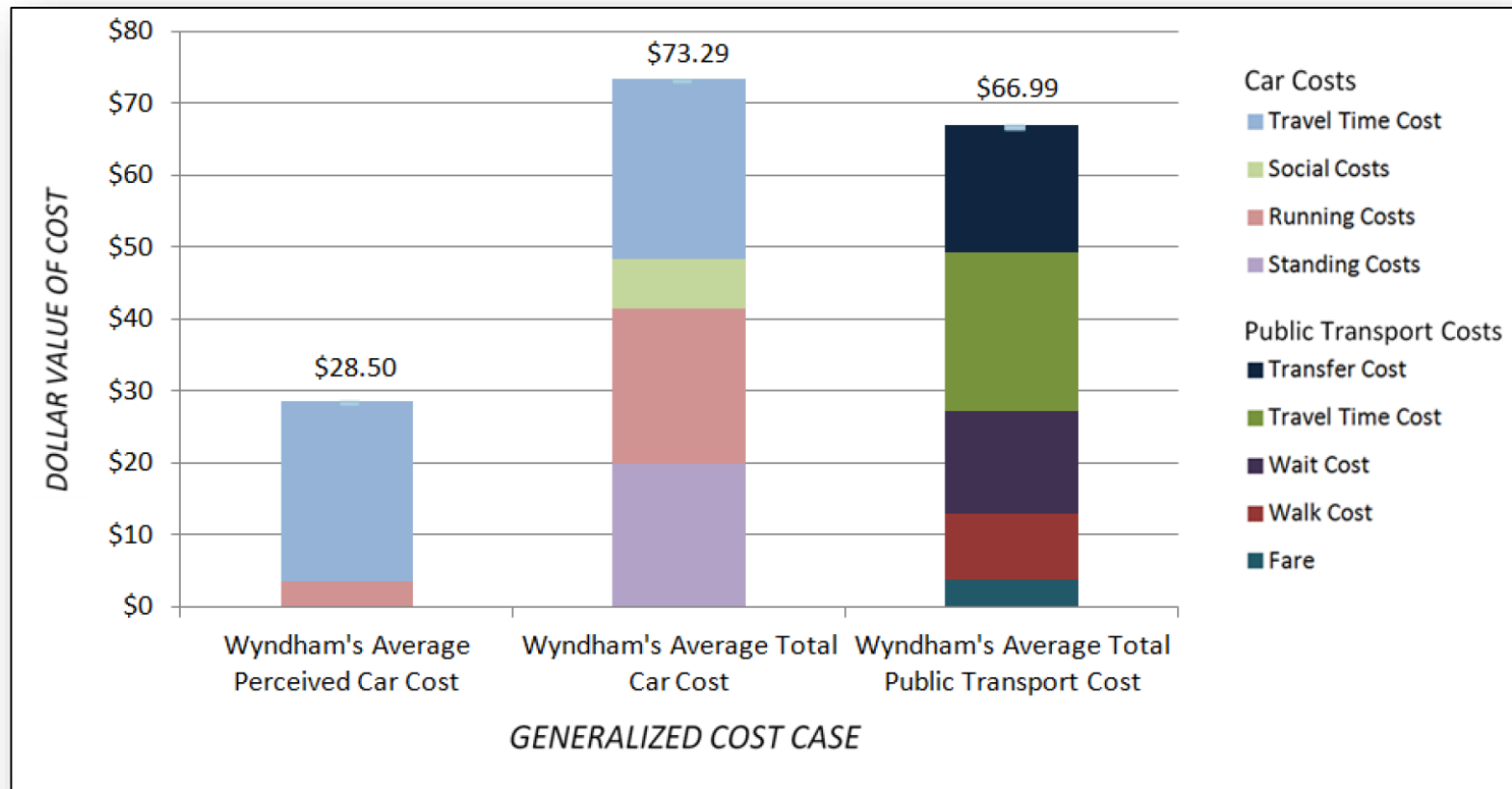
MaaS Critiques

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PT vs Car is NOT about Real Costs – Its about PERCEPTION of costs

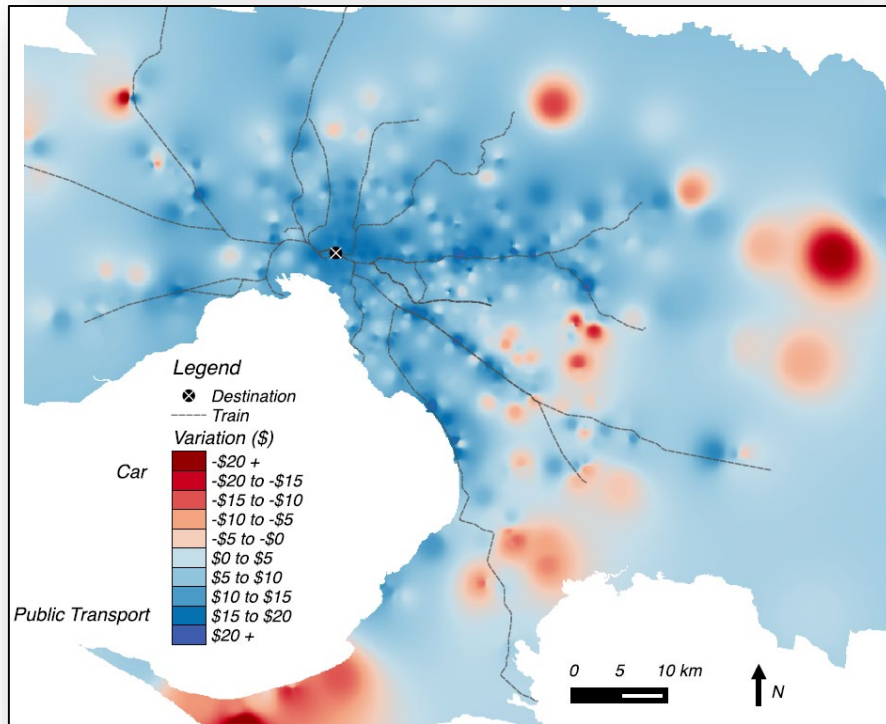
Competitiveness of Car vs Public Transport – Wyndham to City



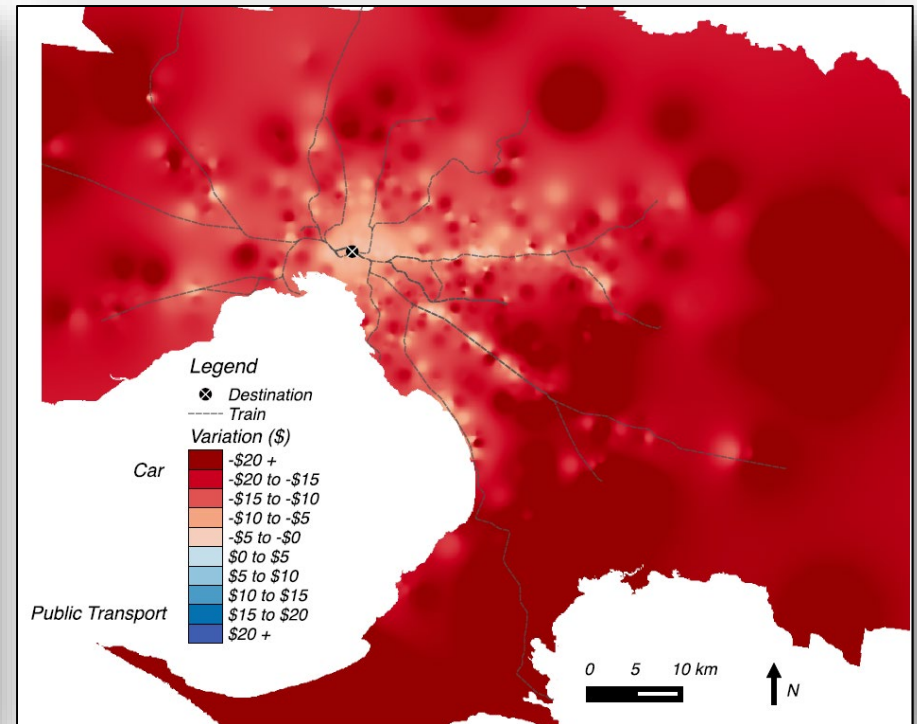
Source: Charlton Z.A. and Currie G (2015) "Competitive Situation of Urban Transport in Wyndham" Dept of Civil Engineering Final Year Research Project, Monash University

PT vs Car is NOT about Real Costs – Its about PERCEPTION of costs

Competitiveness of Car vs Public Transport – All Locations to City



Car vs PT – Full Cost Basis

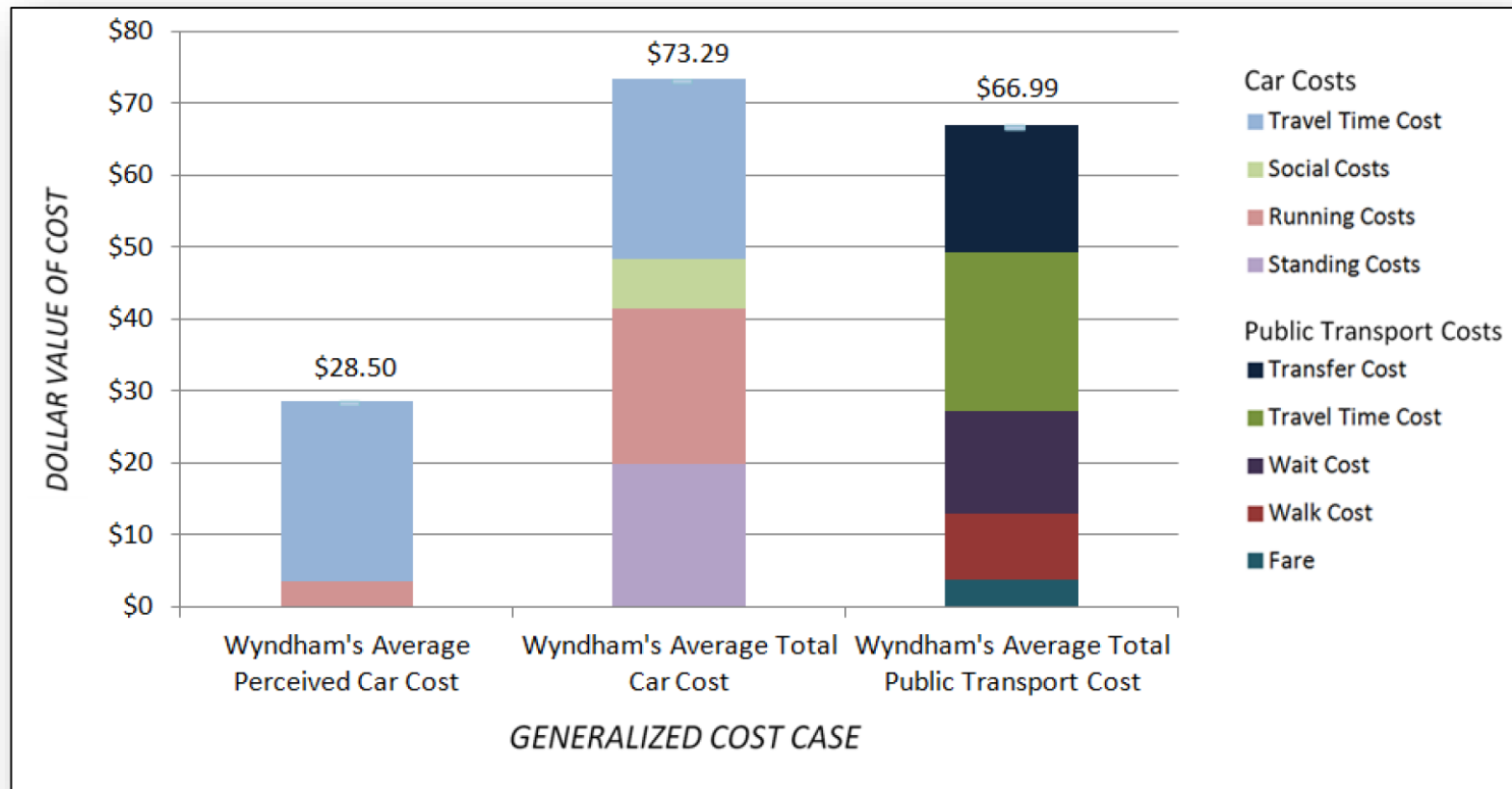


Car vs PT – Perceived Car Cost Basis

Source: Alexis Souchon and Graham Currie (2015) "Exploring Public Transport vs. Car Competitiveness in Melbourne" Dept of Civil Engineering Final Year Research Project, Monash University

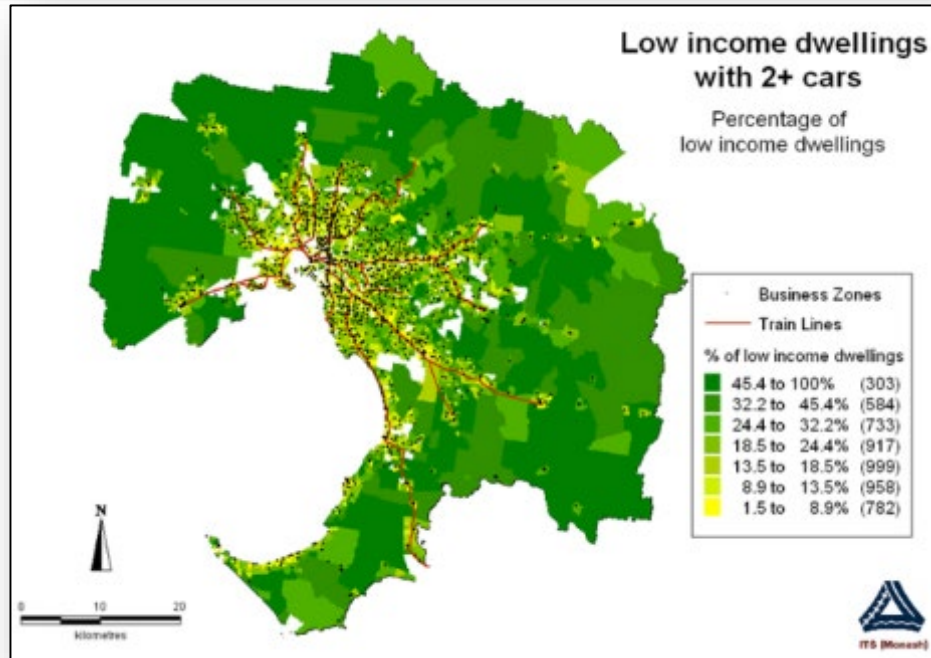
So how will MaaS change perceived costs? Answer – we don't know

Competitiveness of Car vs Public Transport – Wyndham to City



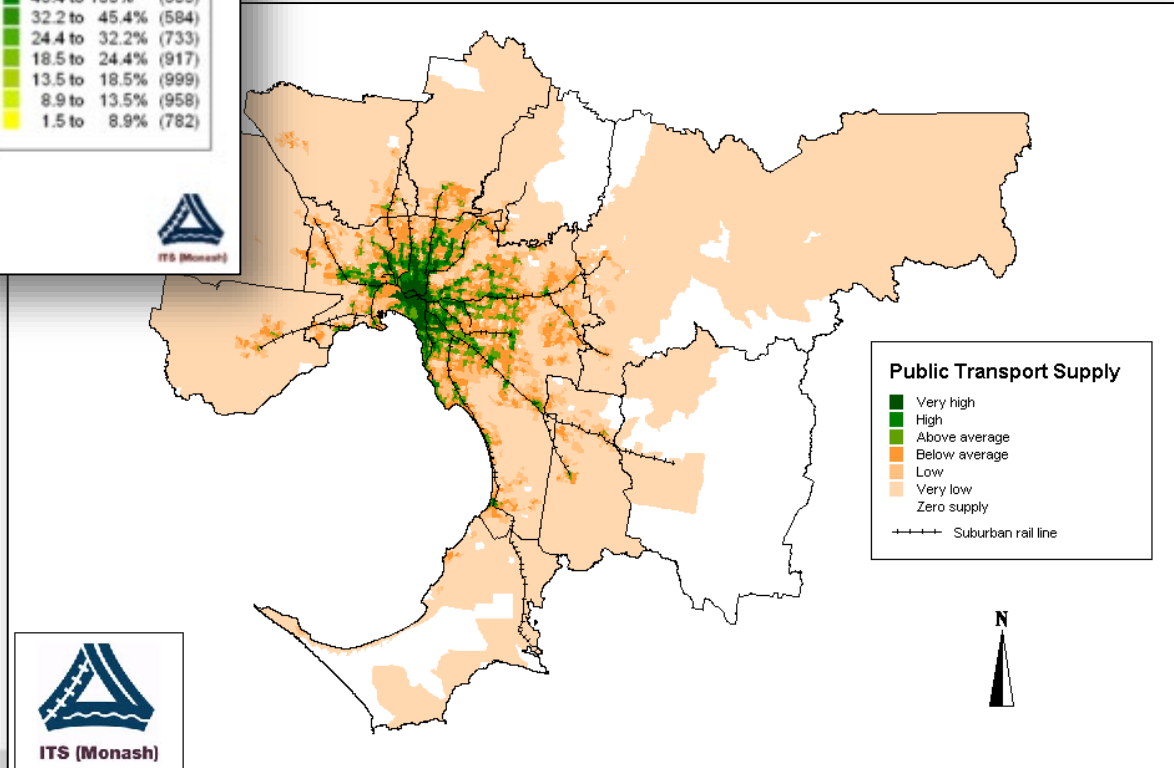
Source: Charlton Z.A. and Currie G (2015) "Competitive Situation of Urban Transport in Wyndham" Dept of Civil Engineering Final Year Research Project, Monash University

Maas is about Choice – but will most of Melbourne doesn't have choice?



Source: Currie and Senbergs (2007)

Source: Currie, G. (2009) Quantifying spatial gaps in public transport supply based on social needs



Is car ownership ever going to die?

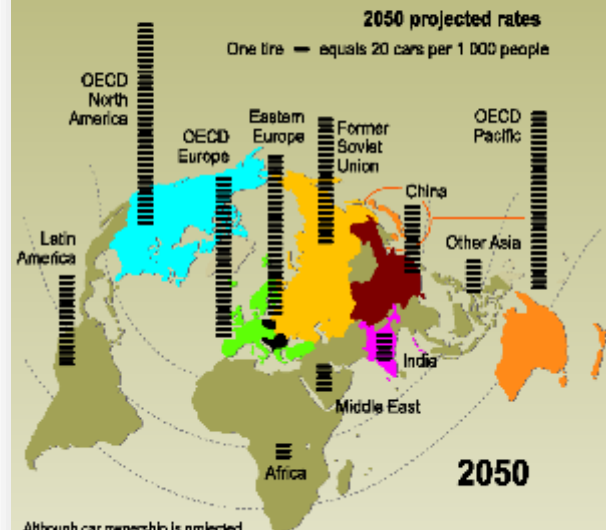
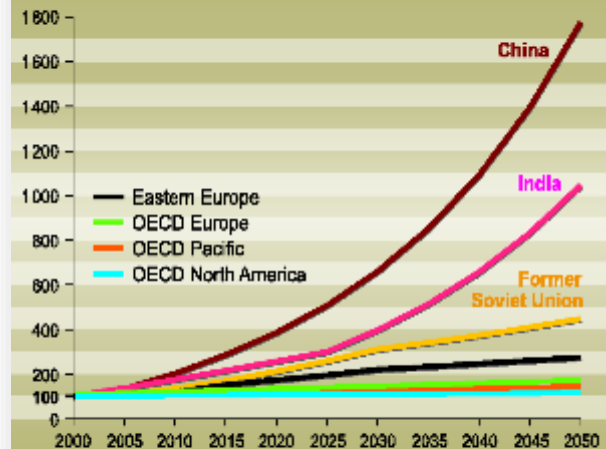


Car ownership rates projections

Car ownership rates

Trend

Index = 100 in 2000



Although car ownership is projected to grow at much higher rates in China and India than in the rest of the world, the number of cars per person will still stay below that of more advanced economies.

Source: WBCSD, 2004, The Sustainable Mobility Project.

What I think

MaaS – What I think

- Much potential; too much hype; not much realistic understanding and appraisal of the problems
- A clear Conclusion from the evidence: Governance is a big problem; the solution is NOT less governance; its putting in place protections for the public purpose whilst encouraging innovation
- The aim is to SOLVE the urban transport problem not create new ones - Need to protect, nurture and enhance mass transit use
- Whats the DEAL? – danger of public authorities “outsourcing their brains” to commercial interests
- In practice – Australian urban environments are not strong places to adopt MaaS due to lack of transport choice and dominant car ownership culture

“Change is Certain, Progress is Not” E.H. Carr (1980)

www.worldtransitresearch.info



The screenshot shows the homepage of the World Transit Research website. At the top, there is a navigation bar with links for Home, About, FAQ, and My Account. The main content area is divided into several sections: "About World Transit Research" which describes the site's purpose; "Browse Research" with a "Follow" button; "Subject Areas" and "Authors" sections; "At a Glance" with "Recent Additions" and "Activity by year"; and "Paper of the Day" featuring a paper on a genetic algorithm for city coach station location. A world map is displayed at the bottom. On the right side, there is a sidebar with a search bar, "Advanced Search" link, "Newsletter" sign-up, "Links", "Related Sites", "Browse" categories, and an "Author Corner" with FAQ and submit research links. The website has a blue and white color scheme with a stylized transit map graphic at the top.

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PTRG is the name for researchers at Monash University who are engaged in research on public transport systems, users, planning and policy.

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