Governing the Smart Mobility Transition

Research Day

Tuesday 30th May 2017

- Professor Greg Marsden
- Dr Louise Reardon
About WCTRS

- WCTRS is a not for profit organisation

- Forum for the interchange of ideas among transport researchers, managers, policy makers, and educators from all over the world, from a perspective which is multi-modal, multi-disciplinary, and multi-sectoral

- It works through a series of major world conferences every three years (Shanghai in 2016 and Mumbai in 2019)

- It comprises 32 scientific Special Interest Groups and has 1382 members

- www.wctrs-society.com – Please join!!!
Governance and Decision-Making SIG Aims

- To advance the understanding of the development, steering and implementation of transportation policies and the role of transportation in wider policy.
  - Developing insights as to the role of context and issues of transferability at a range of scales and geographies
  - Recognising the importance of networks of governance including interactions between industrial, governmental and citizen interests
  - To reach out to governance research across WCTRS and beyond to share practical insights and theoretical and methodological advances
Governing the Smart Mobility Transition
Governing the Smart Mobility Transition
Profound Change

Figure 4.5: OBR long-term motoring tax revenue projections, June 2011

Source: OBR (2011)

Figure 3.6: Different types of state investment as a percentage of general government expenditure since 1963

Note: Public corporation investment is not counted as a component of GGE in the Blue Book. Source: Blue Book, various years.

Internet, Avg weekly sales (£ Millions), Value Seasonally adjusted

Source: OBR (2011)
Aims of the day

- Develop consensus around major challenges
- Share international experience of work looking at some of these issues
- Build bridges between academia and other stakeholders
- Debate options for future governance
- Working with the ITF to ensure that there is more interaction between the research and government/industry communities
ITF Side Event
Governing the Smart Mobility Transition

- Results of scenarios exercise
- Panel of experts reflecting on the scenarios
- Debate from the floor

- Thursday 1245-1415
- Hall 4

01.06.2017 | Research Day 2017 | Greg Marsden and Louise Reardon | 3
Open Discussion
Final Remarks

- Massive thank you to ITF for their support in funding and helping to arrange today
- Join the Governance and Decision-Making SIG
- Find out more about the scenarios on Thursday from 1245pm
Key Governance Challenges in the Smart Mobility Transition:
Perspectives from the United States Transportation Research Board
Sources for Information

- TRB Special Report 319: Between Public and Private Mobility: The Rise of Technology-Enabled Services
- National Academies/TRB Forum: Preparing for Automated Vehicles and Shared Mobility Systems
Governance Issues at Different Levels of Government

• Federal
  – Vehicle safety standards, cybersecurity, planning requirements

• State
  – Operator requirements, licensing, liability, insurance, infrastructure

• State or Local
  – Safety background checks, employment status, reporting requirements, planning
Governance Issues for Technology Enabled Mobility Services

• Inconsistent requirements between taxis and TNCs
• Public safety requirements for vehicles and drivers
• Labor issues, employment status, insurance
• Requirements to provide access for disabled passengers
• Geographic and time of day coverage
• What level of government should regulate TNCs
Current Regulatory Environment for Connected and Automated Vehicles

• Targeted at
  – Vehicle components
  – Operational requirements
  – Operator requirements
  – Vehicle conversion and liability requirements
  – Mobile communication/data privacy requirements

• Testing oriented regulations
  – Registering test vehicles
  – Reporting problems during testing
  – Driver training
Thinking about Governance Issues in a Broader Context

• Need to identify and evaluate actions state, regional, and local agencies can take to maximize positive impacts and minimize negative impacts in the areas of:
  – Safety
  – Congestion
  – Environment
  – Land use
  – Mobility for elderly, youth, disabled
Current Governance Challenges

• Technology development is moving faster than government can respond
• Inconsistent requirements among states and cities, and between states and their cities
• Minimal vs. overly prescriptive requirements
• How to combine regulatory with other policy actions
• Ensuring that needs of the disabled, elderly, young and economically disadvantaged are met
• V2I: Will the public sector be able to deploy, maintain, and update the infrastructure for V2I?
Current Governance Challenges

• Avoiding exacerbating the “digital divide”
• Ensuring that new mobility services and transit support each other, rather than compete
• Incorporating new mobility services into region wide transportation plans
• Developing standard data and reporting requirements
• Ensuring unintended consequences, such as longer trips, increased VMT, more pollution do not occur
TRB as Resource

- TRB website: [www.trb.org](http://www.trb.org)
- TRB webpage on transformational technologies: [www.TRB.org/main/TransTech.aspx](http://www.TRB.org/main/TransTech.aspx)
- Automated Vehicle Symposium: July 11-13, San Francisco, [www.automatedvehiclesymposium.org](http://www.automatedvehiclesymposium.org)
- National Academies/TRB Forum: Preparing for Automated Vehicles and Shared Mobility Systems
- TRB Annual Meeting: January 7-11, 2018, Washington, DC
- Neil Pedersen e-mail: npedersen@nas.edu
New Actors?
New Governance Challenges?

Iain Docherty
Introduction

• Some thinking (and provocations for the day) about current and future disruptions to the mobility *status quo* and what this means for governance (and all of us)

• With thanks to Greg Marsden and Jillian Anable

• Policy Paper available on web at disruptionproject.net
Themes

- What’s happening to mobility and its governance?

- What do we need to think about (fast)?

- Some implications for the research and policy agenda
Terminology... ‘Smart Mobility’ is...

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

- ... but

- There will be imperfect competition (as there always is)
Key contentions (1)

• 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
Key contentions (2)

• We cannot do any planning until…
  • (i) we decide what we want the tech to do
  • (ii) we understand the system in which we are intervening

• Understanding the system involves thinking about what generates mobility in the widest possible socio-economic terms
Transport 101...
Transport (or mobility) is a derived demand
The most important transport and mobility policy trends...

• ... are little or nothing to do with traditional transport policy
We’ve seen the future and it might not work

• We don’t do always transport governance well now when it’s relatively simple

• Consider the consensus view of what we think is happening
  • (Already weak) transport regulation disrupted (or under attack)
  • New actors are fundamentally disrupting the mobility market
  • Consumers become mobility providers too in the ‘sharing economy’
  • Technology firms are promoting their own vision of change… which is producer interest
Why are these new actors interested in mobility?

(A 1.5 trillion dollar p.a. question... by 2025)
Who are the new actors?
Yet...
Transport (or mobility) is a derived demand
And...
Transport creates the utilities of place

(White and Senior, 1983)
New actors want – need – to change how/where/why/when we travel... and the places we live in
We’ve seen the future and it might not work

- Crucial to think about what smart proponents *really* want
  - Smart tech is clearly already a developed ecosystem
- 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
- Oligopolistic/monopolistic power
- High rents (that’s what dominant actors do)
- (Control… over your time and choices)
So do we understand how smart mobility will change our (governance) response to (increased) mobility demand?
No… and we are well behind the producer interests in thinking about this
Can we recast our system of governance to ensure the adoption of ‘smart mobility’ is a positive transformation, or…
So do we understand how smart mobility will change our (governance) response to (increased) mobility demand?
Will we engineer Automobility 2.0 (by default)?
Do we understand what the corporate innovators are imagining?

- What does the ‘smart transition’ as currently imagined and promoted mean...
  - For ‘traditional’ ‘transport’ policy concerns e.g modal share, congestion
  - For ‘macro’ economic concerns e.g. jobs, productivity, spatial patterning
  - For society e.g. racial/gender/generational/economic equalities?
  - For the places in which we live e.g. do we need another Jane Jacobs?
These are *big*, multi-generational choices
Act in haste, repent at leisure

• What are we transforming ourselves into if we really can deliver the smart, instant mobility the tech firms say we can?

• Or… do we want to do this anyway?
  • (i.e. do we understand what ‘smart mobility’ (kit) will do to our cities, our places, our societies?)
“The motor vehicle is a remarkable invention, so desirable that it has wound itself inextricably into a large part of our affairs. There cannot be any going back on it.”

Buchanan, Traffic in Towns (1963)
Smart mobility

“The motor vehicle is a remarkable invention, so desirable that it has wound itself inextricably into a large part of our affairs. There cannot be any going back on it.”

Buchanan, Traffic in Towns (1963)
So, what are the governance challenges in all of this?
<table>
<thead>
<tr>
<th>State Level</th>
<th>Action</th>
</tr>
</thead>
</table>
| National Government | Fund research and development activities and skills development...
|                  | Focus on filling the gaps in provision of reliable, fast, and ubiquitous connectivity.                                                  |
|                  | Establish a data exchange mechanism and mandate open data where appropriate (e.g. in rail franchises).                                  |
|                  | Create a central ticketing platform and multi-modal marketplace and encourage multi-modal integration to support expected advancements in dynamic pricing and timetabling. |
|                  | Foster cross-industry collaboration to unlock value from Intelligent Mobility                                                           |
| Local Government | Encourage and support new business and participate in experimentation with new Intelligent Mobility solutions in private and public transport |
|                  | Shift focus towards procuring against challenges rather than procuring for solutions                                                 |
|                  | Push for integration and innovation in public transport (e.g. demand responsive services)                                             |
“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).
So what do we want the Smart Mobility transition to achieve? (1)

- Perhaps something other than mobility maximisation?
- Better economic, environmental, social outcomes?
“Without a regulatory framework, cities could see outcomes that run counter to goals of mobility, sustainability, accessibility and social equity.”

(Sadik-Khan and Solomonov, 2016:285).
So what do we want the Smart Mobility transition to achieve? (2)

• Short versus Long Game
  • Land use planning, accessibility, social inclusion impacts measured over decades

• Who Pays?
  • Some estimates that a third of transport taxation revenue might be lost within 15 years due to fossil fuel replacement
  • Are we happy about Apple, Google, Uber etc’s tax histories?
So what do we want the Smart Mobility transition to achieve? (3)

- Information Asymmetries
  - New actors on the scene are (primarily) mobility aggregators
  - Have we thought through the impacts of commercialising big data for mobility?
  - Will we create a new ‘mobility divide’ based on the ‘digital divide’?
Regulating the internet giants

The world’s most valuable resource is no longer oil, but data

*The data economy demands a new approach to antitrust rules*
UBER & SMART MOBILITY
Rachit Ranjan
So what do we want the Smart Mobility transition to achieve?

- Information Asymmetries
  - New actors on the scene are (primarily) mobility aggregators
  - Have we thought through the impacts of commercialising big data for mobility?
  - Will we create a new ‘mobility divide’ based on the ‘digital divide’?

- Equity and Inclusion
  - Will Smart Mobility be seamless and on demand for everybody?
  - Will new providers want to offer a universal service?
An example: OECD/ITF modelling on Lisbon

• Private cars *entirely* replaced by different forms of ride- or vehicle sharing with high levels of service across the day

• *One* overall system optimiser/manager

• The existence of only *one or two* models of provision of shared mobility which everyone uses;

• *All users* being accepting of sharing which is imposed upon them by the system manager.
An example: OECD/ITF modelling on Lisbon

• With 100% replacement, traffic falls

• But with only 50% replacement of private cars…

  traffic roughly doubles
Implications for the research and policy agenda

• There is clearly transformative potential in the Smart Mobility transition...

• But…
We are at a ‘critical juncture’

“(critical junctures are) relatively short periods of time during which there is a substantially heightened probability that agents’ choices will affect the outcome of interest”.

Capoccia and Kelemen (2007: 348)
Ensuring a positive transition

• How can we be sure that Smart Mobility…

• Will create new value rather than redistribute costs and benefits?

• Will contribute appropriately to the tax base?

• Will include more people in society rather than exclude them?
Immediate research challenges for governance

• What future policy goals do we want?
  • At some point the state will need to move beyond facilitating technological innovation

• How ‘public’ or ‘open’ do we want future mobility to be?
  • Mobility is facing its own open/closed challenge

• Seemingly minor incremental decisions can lock us in to particular trajectories
Potential Modes of Intervention

• The networks of actors significantly broaden. Governance requires skilled alignment of interests in a dynamic environment. Clarity of goals is essential.

• Requires transparency in why a taxation transition is necessary and how it can be done fairly. Strong political accountability necessary and public participation. Providers as stakeholders but without privilege.
Potential Modes of Intervention

• State acts as an arbiter of a broader set of interests on standards and co-ordination, as a co-provider of information and in setting standards for sharing.

• The state is a partner with the new mobility providers to try and develop systems which deliver greater public value than today. There may be a need to regulate to balance profitable provision with social obligation.
Thank you

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Who are the winners and who are the losers in the smart mobility policy in The Netherlands?

Edgar Salas Gironés and Darja Vrscaj,
Eindhoven University of Technology, The Netherlands
Overview

• The ‘Beter Benutten’ (‘Optimizing use’) program
• The connected bike
• Theory
• Method
• The findings
• Winners and losers
• Policy implications
Beter Benutten (‘Optimizing use’) program

Established in 2011 by the Ministry of Infrastructure and Environment to improve accessibility of different Dutch regions

Two goals:
- Reduce traffic congestion (20%)
- Lower door-to-door travel time (10%)
- Regional approach: Customized mobility solutions in each region
The connected (e-)bike:

Increase (e-)cycling by ICT (connected bike) through:

• ICT innovations, game mechanisms (health, CO₂, fuel savings)
Theory:

How to study differential treatment in innovation policy?

Social Construction of Policy Design (SCPD) framework (Schneider & Ingram, 1993; Ingram, Schneider, & Deleon, 2007):

• Differential treatment explained as the result of social construction of target groups (‘beneficiaries’) in policy

Our approach = Social Construction of Policy Design + Science and Technology Studies
SCPD Framework

Source: Ingram, Schneider, & Deleon, 2007.
Method

Comparative case study in the regions of Maastricht and Brabant, consisting of:

• 12 semi-structured interviews with policymakers
• Analysis of policy documents and websites
• Mapped the results in the four categories and analysed how technology participates in the construction of winners and losers
Research questions

• What is the role of technology in the distribution of wins and losses in the socially constructed target groups in the Dutch BB program?

  • What target groups are constructed in the BB program?

  • What are their wins (benefits, rewards) and losses (burdens, punishments)?

  • What is the role of science and technology in the distribution of wins and losses?
Case studies: Maastricht and Brabant

Selected BB regions to study differential treatment in the connected bike

Connected bike solutions in these regions:
• App connected to cycling behavior
• The more you cycle, more rewards
Findings

For target groups identified:

1. Car-users employees working for BB companies
2. Non-car users employees working for BB companies
3. Students
4. Traffic participants car-users not participating in the program
<table>
<thead>
<tr>
<th><strong>Target group</strong></th>
<th><strong>Ideal target group type</strong></th>
<th><strong>Wins</strong></th>
<th><strong>Losses</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Car-users employees working for BB companies</td>
<td>Advantaged</td>
<td><strong>Material:</strong> e-bike purchasing discounts, lottery, online credit (to buy e.g. a museum ticket), financial rewards for using a bike; purchasing advice, e-bike trials, online motivational coach, increased health, fuels savings, less stress; <strong>common wins</strong></td>
<td>Common losses</td>
</tr>
<tr>
<td>Non-car users employees working for BB companies</td>
<td>Between advantaged and dependents</td>
<td><strong>Currently in Maastricht:</strong> material wins; online motivational coach, online credit,</td>
<td>Currently in Brabant: Exclusion from the connected and e-bike schemes; ii) no financial incentives for purchasing e-bikes</td>
</tr>
<tr>
<td>Students</td>
<td>Dependents</td>
<td><strong>Rhetoric wins,</strong> i.e. MOOCs, change in lecture times, currently still undefined “e-bike solutions”</td>
<td>Exclusion from the connected and e-bike schemes; limited mobility i) access to public transport in rush hours*- which even excludes them from common wins, ii) no financial incentives for purchasing e-bikes</td>
</tr>
<tr>
<td>Traffic participants-car users not participating in the program.</td>
<td>Contested social construction</td>
<td><strong>Common wins</strong></td>
<td>Common losses</td>
</tr>
<tr>
<td>Common wins and losses</td>
<td></td>
<td>less congested roads, better accessibility of cities</td>
<td>increased parking fees, less road space</td>
</tr>
</tbody>
</table>
1. Car-users employees working for BB companies

Socially constructed as an *advantaged* group (high power, positively constructed):

- High material and rhetoric wins, and NO targeted losses

- **Material wins:** e-bike purchasing discounts, lottery, online credit, financial rewards for using a bike; purchasing advice, e-bike trials, online motivational coach, increased health, fuels savings, less stress; common wins

- **Losses:** symbolic, such as social pressures to change their behavior; common losses: narrower streets, less parking space, and increased parking fees
2. Non-car users employees working for BB companies

Social constructed between the *advantaged* and *dependents* (implying a mix of rhetoric and material wins, but less material than the advantaged group, and few losses)

- **Different treatment in the two regions**, and throughout the different project phases:
  - Maastricht in the early phases exclusive not able to join the wins of the connected nor e-bike schemes. Now, the same wins as the car-users
  - Brabant in the early stages inclusive. Now exclusive, only symbolic wins, such as access to lottery, also excluded from common wins
3. Students

*Dependents* (a positive social construction, but limited power to access and participate in the connected bike initiatives)

- **Rhetoric wins**, i.e. MOOCs, change in lecture times, currently still undefined “e-bike solutions”

- **Losses**: exclusion from the connected and e-bike schemes; limited mobility i) access to public transport in rush hours - which even excludes them from common wins, ii) no financial incentives for purchasing e-bikes
4. Traffic participants car-users

Contested social construction, but powerful, “bad behaviour”

• **Common wins**: less time travelling, less stress

• **Common losses**: narrower streets, less parking space, and increased parking fees
Winners and losers

• Losers:
  • Students (a burden, receive losses - limited mobility, excluded from any of the wins included in the connected (e-)bike scheme)
  • non-car users BB employees in Brabant (excluded from the connected (e-)bike BB schemes and from the common wins, because they are non-car users)

• Winners:
  • Car-users (positively constructed, access to most wins, and receive no losses – but the entire program is founded around the idea that using cars in peak hours should be changed)
Policy implications

• There is an unequal treatment in smart mobility policy:
  • Students, non-car users BB participants
  • Cars users (in BB companies) receive oversubscribed benefits
  • ICT
    • Policymakers should aim for more symmetrical and inclusive approached

• Limited punishments (losses) for behavioral change

• Market parties increasingly involved in target group treatment

• Limited attention to non-participating companies in the program

• Limited attention given to non-peak hour travel
Thank you for your attention!

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The case of Mobility as a Service: a panacea or chimera of urban transport and governance?

Presentation to Governing the Smart Mobility Transition Research Day,
Leipzig
30th May 2017
Dr Kate Pangbourne (ITS Leeds), Dominic Stead (TU Delft), Milos Mladenovic (Aalto University), Dimitris Milakis (TU Delft)
Introduction

• Transitions and drivers affecting urban mobility
• Contested cities: issues and visions
• What is Mobility as a Service (MaaS)?
• Panacea: Marvellous MaaS
• Chimera: Monstrous MaaS
• Unanswered questions
• Conclusions
Smart mobility isn’t smart if it doesn’t result in behaviour change

High level problems

- Urban congestion, noise and air pollution
- Public health and transport safety
- Climate change-related emissions reduction
- Environmental change

Smart Cities/Smart Mobility

“it is vital to circumvent locking in carbon-intensive and climate-vulnerable infrastructure in both developed and developing countries”

Thomopoulos et al 2015 p 7 citing Ang and Marchal 2013
Governance
• Legitimacy and accountability
• Greater responsibility for transport at local and regional level
• Shift from public to private model of service provision
• Smart Cities blurs with Competitiveness agenda
• Scaling up solutions

Pressures
• Rapid technological change
• Push to marketise
• Climate change
• Geopolitical shifts
• Urbanisation
• Energy security and supply
• Funding reductions
• Cyber security

Social change
• Ageing population
• Greater demand for flexibility
• Growing interest in access more than ownership
• Widening inequality
• Mismatch between choice and limits

Using technologies – new data sources, new data uses, persuasive technologies, ‘seamless’ service provision, new business models
Shared mobility has a long history. It is the sharing between more than one person of a single vehicle (not a train!). Users can get short-term access on an ‘as-needed’ basis. Concept includes car and bike sharing, ride-sharing, flexible transit, bike courier services. Two traditions: social/communitarian peer-to-peer brokerages, Start up peer-to-peer marketplaces. Increasingly corporates are absorbing peer-to-peer services into platforms that serve customers.

New regulatory and legal developments in Denmark and Italy are posing fresh challenges for ride-sharing giant Uber across the Atlantic even as it waits for a potentially game-changing decision from the European Court of Justice.

In Denmark, Uber is expected to halt operations on April 18 due to the imposition of new taxi rules that require vehicles for hire to be equipped with devices like fare meters and seat-occupancy sensors. Most Danish taxis already have the required equipment, but Uber vehicles – which are private cars owned by their drivers – do not. Thus, Uber officials said they had no choice but to shut down in Denmark, where the company says some 300,000 people have downloaded its app, and where it claims 2,000 drivers in its operation.

In Italy, a court in Rome last week gave Uber 10 days to stop operating in the country (until April 17), threatening it with fines of more than $10,000 a day if it does not. Uber is expected to file an appeal.

The ruling came in a case filed by drivers at traditional taxi unions, who charged that Uber’s activities constituted unfair competition under Italian law. The court said Uber must stop use of its smartphone apps and discontinue all promotion and advertising.

Smart Mobility and ICT

Smart Mobility is dependent on integration rather than intensive use of ICT.

Other developments also important to the achieving the goals of Smart Mobility, such as energy source change (e.g. switch to electric vehicles, hydrogen) or efficient utilisation.

ICT is CENTRAL to MaaS but MaaS is NOT central to Smart Mobility:

“Using a digital interface to source and manage the provision of a transport related service(s) which meets the mobility requirements of a customer.”

Definition used by the Transport Systems Catapult (UK)
Mobility as a Service: early entrants

- Proto-MaaS
- Smartcard systems, e.g. Oyster
- Early app pilots building the idea
- Superhub, MyWay, UbiGo, Smile
- Developments from sharing economy
- Flinc, WhipCar, Waze, Car2Go, BlaBlaCar, ReachNow, Zipcar, CoWheels
- Full MaaS services not yet fully deployed across every mode, varying offers
  - Moovel and Qixxit (Germany)
  - HannoverMobil (Hanover)
  - UbiGo (Stockholm)
  - GoLA and GoDenver (USA)
  - Whim (Helsinki, West Midlands)
  - Pick&Mix (Scotland)
- Platform players, e.g. Upstream
Many players have to be persuaded.

12 capabilities and requirements that may affect the ability of business to deliver MaaS:
- Cost Model
- Business Plan
- Intellectual Property
- Market
- Product/Service Development
- Funding
- Partner SLA/KPI
- Sharing Economy
- Customer Service
- Piloting
- Risk
- Profit

18 indicative policy areas that could be used to affect how MaaS is delivered:
- Local MaaS Regulation
- Open Data/Open Source Policy
- Tax Relief for Workplaces
- MaaS Procurement Framework
- Fiscal Savings
- Buses Bill
- MaaS Provider Licensing
- Long Term MaaS Government Policy
- Unions
- MaaS Funding
- Tax Relief for Travellers
- Mobility Operators Licensing
- Ticket Reselling Regulation
- Social Inclusion Policy
- Passenger Rights Regulation
- Highway Regulation
- Employee Rights
- Investor Incentives

TSC Stakeholder Workshop
### Five Main Features to ‘Customer Experience’ (TSC)

<table>
<thead>
<tr>
<th>FEATURE</th>
<th>BENEFIT PERCEIVED BY THE CUSTOMER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personalised Service</td>
<td>A personalised service that builds a relationship between the customer and the MaaS Provider, so that relevant travel choices can be anticipated and provided.</td>
</tr>
<tr>
<td>Ease of Transaction</td>
<td>The customer can conveniently access transport operator assets and services by using a range of devices, for example a smartphone, smartwatch, smartcard or bank card.</td>
</tr>
<tr>
<td>Ease of Payment</td>
<td>The customer can pay for their mobility to suit their needs - choice of pay-as-you-go, pre-pay or post-pay including the use of a monthly subscription model can be offered.</td>
</tr>
<tr>
<td>Dynamic Journey Management</td>
<td>The customer is provided with a dynamic journey management service that keeps the user informed in real-time if their journey expectations will need to change.</td>
</tr>
<tr>
<td>Journey Planning</td>
<td>A journey planning service allows a customer to plan their journey based on their personal preferences - for example, time, cost, comfort, convenience.</td>
</tr>
</tbody>
</table>
“After a month of using MaaS, Melinda’s family life has completely changed. They have sold Melinda’s car and offer the other car for short term rental using the MaaS operator’s website (community car club). In exchange Melinda’s family gets credit in their MaaS account, which they use to buy mobility services. Due to the time they save on their daily commutes they now have more time to have family breakfasts and have saved money by selling their cars.”
<table>
<thead>
<tr>
<th>STAKEHOLDER</th>
<th>ROLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Customer</td>
<td>Consumes the MaaS offer from the MaaS Provider.</td>
</tr>
<tr>
<td>The MaaS Provider</td>
<td>Designs and offers the MaaS value proposition to satisfy customer demand.</td>
</tr>
<tr>
<td>The Data Provider</td>
<td>Acts as a data broker to service the data and information sharing requirements of the Transport Operators and MaaS Provider.</td>
</tr>
<tr>
<td>The Transport Operator</td>
<td>Provides the transport assets and services including public and private transport, highway capacity, urban-realm assets such as car parking, electric vehicle charging points, and digital assets such as ITS infrastructure.</td>
</tr>
</tbody>
</table>

**TABLE 2:** Definition of stakeholder roles in the MaaS ecosystem
You like to go wherever the wind takes you. Whether you’re young or simply young at heart, you hate the hassle of buying tickets, juggling services, or keeping up with car maintenance. Commitment might not be your strong suit, but that’s okay! Life is meant to be enjoyed, and you do it at your own pace. And we’re willing to bet that you have a number of people in your life who are secretly envious of your free-wheelin’, go-where-you-please lifestyle. Rock on!

Whim, the world’s first all-inclusive mobility service, will help you live your life the way you want. Whim’s Move on a Whim service would fit perfectly into your energetic lifestyle! After launch, you’ll be able to test everything out with zero commitment, paying as you go to enjoy all of the different MaaS options.

Do you ever stop and catch your breath? Your life is hectic, and you wouldn’t have it any other way. You love the hustle and bustle of daily life – travelling with family or friends, heading out to hobbies that you’re passionate about, and doing a job well done in a career you’re proud of. You also like to take an occasional pause to recharge, and weekend getaways can be your sanctuary. But in the end, you want to pack in as much living as you can. Life is short, after all!

To help you get the most out of life, we think you would love Whim, the world’s first all-inclusive mobility service. With Whim’s Monthly Mobility service, you’ll enjoy unlimited public transportation and bicycle use, with additional points to use on taxis, trains, and more. For someone always on the move like you, the options are endless!
Selling an impulse-driven consumerism (but with a conscience)

MaaS Global
- combines options from different transport providers into a single mobile service
- removes hassle of planning and one-off payments
- for extra convenience, MaaS includes value added services like deliveries for groceries or restaurant meals.

“environmentally-sound alternative to owning a car”

“carefree”

Nothing pleases you more than ease. You’re not concerned with material possessions — for you, life is all about the experiences you find along the way. You love to stop and smell the roses, laugh until the wee hours of the morning, try exotic new foods in inspiring locations, and most importantly, make unforgettable memories with friends. You should have the freedom to enjoy everyday travel just as much as you enjoy life — the getting there should be simple, so that you can focus on enjoying the ride.

Which is exactly why we think you will love Whim, the world’s first all-inclusive mobility service. Using Whim’s Monthly Mobility service, you’ll enjoy unlimited public transportation and bicycle use, with additional points to use on taxis, trains, and more.
Promises, promises

You move, you groove — and you often do both at the same time, with style. You’ve worked hard to get where you are in life, and the people in your life respect you for it. You’re not shy about letting that hard work show, and often splurge on the finer things in life as a reward. Sometimes life just needs fine wines, luxurious locations, and shiny cars. What’s the point of it all if you can’t enjoy the best? And hey, you’ve earned it!

The natural choice for you is Whim, the world’s first all-inclusive mobility service. Whim’s Ultimate Freedom service will let you travel in any way you like, from taxi to chauffeur, rental car to domestic flight. Ain’t life grand?
Discussion – is MaaS Smart or Imprudent?

- Critical perspectives are urgently required on the potential impacts and ideological basis of MaaS concept versus ITS
  - Political economy
  - Urban planning
    - Managing the urban environment for the public good
    - Impact on planning processes structured around forecasting and modelling
  - Transport governance
    - Incumbent resistance
    - Demand rationing
    - Pressure to innovate
  - Who regulates?
  - Vision, wider social practices and norms
  - Social justice
    - Accessibility, exclusion and transport poverty
Marvellous MaaS

- Portrayed as mobility game changer that enhances city image
- Contributes to decrease of car ownership by facilitating the sharing economy
- Said to drive efficiency and hence sustainability
- Future proof enough to absorb EVs and then AVs
Monstrous MaaS

- IT players looking for revenue streams
- Automotive industry looking for a future
- Disruptive and/or predatory business models
- Profits so far elusive
- Cherry-picking (e.g. young) or credit checking (exclusion)
- No unified definition and policy lagging behind
- Loss of privacy, lack of consumer rights
- Eggs in one basket: dependence of people, operators and governance on MaaS provider(s)
- Policy-makers reduced to customers of businesses
The pursuit of MaaS as a commercial opportunity speaks to the competitiveness strand of the ‘Smart City’ agenda.

Different city responses seen in face of other disruptive, predatory or semi-legal developments such as AirBnB and Uber, what lessons should be learned early on in facilitating or managing MaaS?

MaaS is not explicitly referenced in strategic plans (e.g. DfT)

Governance levers could be lost through ideological pressure to create revenue streams out of previously public goods (e.g. some data, or charging for access to previously shared streets, even bikes or walking)

Result is neglect of social and ecological sustainability disguised in optimistic generalisation.

Strategic management needed to set objectives, monitor mode share changes, social and environmental impacts: what would be a good mobility service?

https://www.geospatialworld.net/self-sustainable-city-smart-city/
THANK YOU!

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www.adapt.leeds.ac.uk

With Dominic Stead (TU Delft), Milos Mladenovic (Aalto University), Dimitris Milakis (TU Delft)
Governing Smart Mobility: Reframing the Categories of Transport Regulation

Professor Robyn Dowling
Sydney School of Architecture Design and Planning
https://transitscreen.com/blog/smart-mobility-ecosystem/
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Description of Impact of Technological Transportation</th>
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<tbody>
<tr>
<td>Means of access and ownership</td>
<td>Emergence of sharing – car share, bike share means that simple distinction between public and private transport no longer valid</td>
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<tr>
<td>Business models</td>
<td>Technology companies disrupting traditional forms of transport – Lyft, Uber and the like</td>
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<tr>
<td>Transport information</td>
<td>Apps, real time information</td>
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<td>Ticketing and payment</td>
<td>Smart cards, integrated ticketing across modes</td>
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<tr>
<td>Traffic management</td>
<td>Real time, platooning, parking management</td>
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<tr>
<td>Infrastructure</td>
<td>Sensors, bus stops</td>
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<tr>
<td>Vehicle technologies</td>
<td>Automation and electrification (across freight, private passenger transit, shared passenger transit)</td>
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</tbody>
</table>
Open data
Realising the benefits from open data

Internet of Things
Harnessing the IoT in transport

Customer service
Customer service in the digital age

Automated vehicles
Emerging vehicle technologies

Disruptive tech
Disruptive future technologies

Source: Future Transport NSW Forum 2016
Conceptual Remarks

– Governance as programmes that seek to intervene in social processes to produce desired outcomes and avert undesired ones
– Framing of a problem connected to its proposed solutions
Car Sharing
Planning facilitates car sharing

– 6 of 8 councils have car share policies
– ALL focus on providing dedicated parking for car share cars
– Justified because of parking efficiency and congestion
– “more efficient use of on-street parking”
– “reduce parking congestion”
Personal Mobility Devices
Rules for personal mobility devices

In Queensland, a personal mobility device can be used on road-related areas such as paths and nature strips. To use a personal mobility device in Queensland, it must:

• be designed for use by a single person only
• be self-balancing while in use
• be powered by an electric motor
• have 2-wheels that operate on a single axis
• have a control to limit speed to 12km/h or less
• have a maximum speed of 20km/h
• have a maximum width of 850mm
• have a maximum weight of 60kg—when not carrying a person or load.

Streetwalkers, pedestrians and robots will soon share pavements.


Autonomous Vehicles
Autonomous and Human Driving

Thanks to my collaborators on these projects

Jennifer Kent
Sophia Maalsen
Catherine Simpson
Richie Howitt
Ian Faulks
Julia Irwin
Clancy Barrett
ARC DP140102393
Normalising Innovation: Constructing Legitimacy for Automated Goods Mobility

Debbie Hopkins & Tim Schwanen
Transport Studies Unit, School of Geography and the Environment
University of Oxford
30 May 2017
The Problem(s)

Normalising Innovation: Constructing Legitimacy for Automated Goods Mobility
ENERGY DEMAND

CARBON EMISSIONS & PARTICULATE MATTER

LABOUR, EMPLOYMENT & WORKING CONDITIONS

PACKAGING, RECYCLING & SUSTAINABILITY

SHOPPING & MASS CONSUMPTION
How do we think about the freight industry?
How do we think about the freight industry?
Heavy Goods Vehicles

- Limited options for **decarbonisation**;
- Energy demand reductions rely on: efficiencies in driver behaviour, alternative fuels (e.g. biofuels), operational efficiencies, design improvements;
- **Contestations** with other road users;
- Mostly **large fleets**;
- Issues with **driver recruitment and retention**.
Freight-related van movements are carbon and energy intensive;

Across the EU, urban freight is responsible for 25% of urban transport-related CO₂ emissions and 30 to 50% of other transport-related pollutants [particulate matter (PM), Nitrogen Oxide (NOx)];

Very low load factors for delivery vehicles in cities (e.g. 38% for vans in London);

Large proportion of SMEs (e.g. 85% of short distance van companies have fewer than five employees.)
Our research brings social science insights to questions of innovation and goods mobility within and between cities, focusing on implications for energy demand and emissions.
Innovations in Goods Mobility

Normalising Innovation: Constructing Legitimacy for Automated Goods Mobility
Autonomous (freight) vehicles

Proposed benefits:
• Fuel efficiencies
• Safety improvements
• Reduce noise pollution
• Reduce air pollution
• Resolve driver shortage*

Limited evidence that these benefits will be achieved in the ‘real world’
Passenger versus freight

• Political, industry and public focus has been on passenger vehicles;
• Yet the freight industry may offer greater potential for rapid diffusion, and some parts of the supply chain are easily automated;
• But there are important implications and sensitivities associated with the automation of freight transport.
Theoretical Grounding

Normalising Innovation: Constructing Legitimacy for Automated Goods Mobility
Automated freight ‘environments’

- Policy environment
- User environment
- New product
- Wider society
- Business environment
Expectations

“...innovations are often based on technologies that are yet to emerge... consequently it is challenging to set cognitive expectations given that stakeholders may not find it easy to comprehend the future based on such technologies” (Garud et al., 2014)
Constructing legitimacy

Legitimacy is defined as: “a generalized perception or assumption that the actions of an entity are desirable, proper, appropriate within some socially constructed system of norms, values, beliefs, and definitions” (Suchman, 1995)

Projective stories can be used to set expectations to establish legitimacy for the technology and business venture – particularly when the future is unclear and in a context of fundamental uncertainty.
Our Approach

Normalising Innovation: Constructing Legitimacy for Automated Goods Mobility
Research method

1. Constructing a need for energy demand reduction for the freight industry (n=229)

2. Legitimising innovations for energy demand reduction (n=959)

3. The role of automated vehicles for the freight industry (n=430)
Process and sample

• Articles published to **18th May 2017**;
• All documents downloaded, read, and checked for relevance to the topic: self-driving/ automated/ autonomous vehicles, freight;
• Duplicates removed – **n=136**;
• Documents uploaded to NVivo11 software;
• All documents coded liberally to identify the storylines that are being used to legitimise/ delegitimise the emergence of autonomous vehicles for the freight industry.

**MAIN FRAMING FROM ARTICLES (%)**

- **Positive** 80%
- **Negative** 13%
- **Neutral** 7%
• Increased safety
• Decreased fuel consumption
• Decreased emissions
• Reduce congestion
• Decrease driver fatigue
• Improve driver conditions
• Fewer accidents
• 24/7 operations (without current driver hour restrictions)

[+] 80%

• Relative expense
• Insurance/ responsibility for goods
• Safety concerns
• Job security
• Public perceptions/ acceptability
• Practicalities (complexities) in urban context
• Platooning may not work in some places (e.g. UK motorways)

[-] 13%
ARTICLE TYPE (%)

- Industry Media: 61%
- Mass Media: 39%
What’s in a Name?

Normalising Innovation: Constructing Legitimacy for Automated Goods Mobility
TERMINOLOGY USED IN ARTICLES (%)

- Autonomous – 32.5%
- Driverless – 27.7%
- Self-driving – 22.9%
- Technology (e.g. drone) – 6.7%
- Automated – 6%
- Robot – 3%
- Unmanned – 0.6%
- Not defined – 0.6%
Autonomous, automated, or driverless?

“There has been a lot of talk about autonomous trucks of late. Note, please, that the talk has been about autonomous trucks and not driverless trucks.” [A72: Fleet Equipment]

“To me, autonomous means a vehicle without a steering wheel or any pedals whatsoever,’ he explains. ‘There's no human intervention other than telling the system where you want to go, and it takes you there. So I like to say ‘highly automated vehicles’ when describing how safety systems will advance in real-world terms over the next decade.’” [A60: Fleet Owner]
When the ‘driver’ becomes ‘Captain of the Ship’

“A truck driver will become more like the captain of a ship who continually monitors a ship’s function but is not required to be at the wheel” [A10: Motor Transport]

“It will be possible for truckers to advance to new positions as transport managers, making truck driving a more attractive profession. Autonomous driving could thus help to resolve the shortage of truck drivers” [C12: The Engineer]
Media framing of the ‘driver’

“Technology that would allow driverless truck freeway transit is coming... Add short-haul drone deliveries and we'll have massive labor loss that can't be blamed on trade or regulation but solely on technology” [A35: San Diego Union Tribune].

“George Osborne is expected to announce in his budget next week that driverless lorries will be tested on UK roads. By doing so he will herald the arrival of a new era of automation that will have a dramatic effect on the job prospects of many millions of British workers” [D8: The Guardian].
A Race to the Future?

Normalising Innovation: Constructing Legitimacy for Automated Goods Mobility
Innovation, regulation and industry

“No one told Daimler to do this. There is not regulation nor statute that I am aware of that demands R&D expenditure be directed towards autonomous vehicles. The Inspiration Truck arrived not because it had to but because it could” (A72, Fleet equipment)
Who ‘wins’: Incumbents &/or new entrants?

Constructing a Sci-Fi Future?

Normalising Innovation: Constructing Legitimacy for Automated Goods Mobility
Robots and a sci-fi future

Robo-trucks, robo-delivery, robotic-vehicles, robots, robotic features:

“Americans have long had an infatuation with robots, from Robby the Robot in the 1956 sci-fi classic "Forbidden Planet" to Stanley Kubrick's HAL 9000 and Rosie the maid on "The Jetsons." Robots even have permeated the trucking industry, as we've seen "Transformers" leader Optimus Prime morph into a Mack Granite... Of course, robots in the trucking industry are pure fantasy, right? Well, maybe not.” [A43: Commercial Carrier Journal]
‘Fuel efficient’ robots

“...Because truckers are paid by the mile, they drive faster than is optimal for fuel efficiency and robots don't mind going 45 mph.” [A1: Fleet Owner]

A somewhat simplistic views on what is a rather complex transport system...?
The future is out there?

“This isn't some abstract and remote future he's considering. Recent autonomous technology demonstrations in Europe show that ‘**driverless trucking is right around the corner**' and we can't afford to put off considering how this is all going to work.” [A1: Fleet Owner]

“Tim Lawlor, CFO at logistics provider Wincanton, is also excited by the new technology. He believes that it will inevitably affect his business and driverless trucks will require investment. **Yet for now the technology is embryonic.**” [A18: Financial Director]
Concluding thoughts

Normalising Innovation: Constructing Legitimacy for Automated Goods Mobility
An uncertain [automated] future

- Governments are enthusiastically engaging in niche development, nevertheless, there is a high degree of uncertainty relating to:
  - The different technologies, and their potential impact and implications for the freight industry;
  - The degree of automation (level 1-5) that will be mainstreamed;
  - The role of drivers [relates to the degree of automation];
  - The places and spaces most suited to automation [although motorways do emerge consistently as a good site];
  - The timeframes in which the vehicles are expected to emerge.
- The role(s) of different actors is not yet clear; new partnerships are emerging which may shift hegemonic structures.
Normalising Innovation: Constructing Legitimacy for Automated Goods Mobility

Debbie Hopkins
debbie.Hopkins@ouce.ox.ac.uk
Governmental Capacity and the Smart Mobility Transition
Case Study Approach

1. Structured, focused case comparisons
   To shed light on politics of urban transport policy decision-making and implementation in ways that attend to urban, political, economic, sociocultural, and territorial histories of various locales (Flybjerg 1998; George and Bennett 2004; Davis 1994; Stone 1989).

2. Eight case studies
   Reflecting a variety of urban transport innovation in recent years, from selection of 20 relatively high income, and democratically governed cities.

3. Primary Data
   From interviews in addition to archival materials, newspaper accounts and other public sources to assess whether and how key leaders influenced significant decisions about transportation in their locales.

4. Analysis
   Built on policymakers “generic knowledge” of recurrent policy problems and focus on the “manipulable variables” that policymakers can influence rather than “structural variables” that are beyond their control to ensure that scholarship is connected with and can influence the world of practice.
TUT-POL Cities

Project aim is to advance our knowledge of how, when, and where political leadership and governance have proven critical to the successful implementation of path-breaking transportation policies.
SAN FRANCISCO VS STOCKHOLM
What is Being Transformed?

Policy Success → Governance Capacity

- Ridesourcing
- Congestion Charging
- Coordination of Modes
- Integrated Transit-Land Use
- Transport Financing
Analytic Questions

1. How might implementation processes that deliver altered mobility conditions further expand or weaken the leadership mandates and institutional capacities of governing officials to roll out continued smart mobility solutions?

2. Are certain leadership strategies or governance arrangements better suited to leveraging long-term (as opposed to short-term) mobility goals?

3. Has adoption of smart mobility policies required new leadership or governance strategies and tactics; and if so, how do they affect the achievement of short and long-term policy aims?
Leadership & Governance
San Francisco

Circumscribed and limited to a few actors, confined mainly to a small number of regulatory agencies.

Tech-savvy private sector firms develop ridesourcing applications and deploy business models that minimize costs by relying on drivers with personal cars and insurance.

While operating illegally, promoters seek changes to regulatory framework given opposition from the city’s heavily monitored, politically active taxi operators and crackdowns by local and state enforcement agents.

Service failures of local taxi industry result in lack of organized public opposition to favorable ridesharing regulations. In contrast, well-resourced ridesharing firms and tech executives close to mayor demonstrate strong support.

Mayor Edwin Lee (2011-current) embraces ridesharing as embodiment of sharing economy and keystone of innovation-based economic development strategy for the city in an effort to bridge warring Progressive and Moderate factions in local politics.
Ridesourcing firms most proactive in mobilizing stakeholders. Using email and social media to mobilize potential supporters, they urge them to contact elected officials, attend public meetings, and sign online petitions in support of ridesharing services.

Mayor Lee blocks local regulators from cracking down on ridesharing companies while escalating regulatory debates and policy negotiations to state level – specifically, the California Public Utilities Commission (CPUC), viewed as a more business-friendly venue and where taxi interests typically have less influence.

The CPUC establishes new rules for Transportation Network Companies requiring insurance, background checks for drivers, and vehicle inspections but otherwise lets firms continue to operate and grow in.

Absence of political capacity and willingness to debate and consider pros and cons of ridesourcing in light of city’s larger sustainability aims and regional transit system.
Ridesourcing: What Was Transformed?
San Francisco

Short-term Policy Success
Creation of new regulatory structures to legalize and enable expansion of ridesourcing services.

Long-term Impacts?
Unrealized policy deliberation and institutional coordination of ridesourcing with public transit systems and transportation and land use planning priorities at local and regional scales.
Leadership & Governance
Stockholm

*Distributed across multiple levels of government, territorial scales, parties and sectors.*

Congestion charging hotly debated within and between political parties, among local and national officials, and by transport and urban planners since the 1970s. The 2002 resurgence of the idea takes advantage of more technologically advanced monitoring capacities.

Pressured by the local Green and Stockholm Parties and national-level Social Democratic Party colleagues, Mayor Annika Billström (2002-2006) moves forward on congestion charging against her own campaign promises.

To counter opposition, trial run financed via party channels and higher levels of government. To insure success, transport planners coordinate with private sector actors (i.e. IT firms, local businesses) and civil society groups (i.e. environmental organizations, affiliated Green and Stockholm Parties, professional planning associations).

Following trial and local referendum, inter-party and regional consensus pave the way for parliamentary approval.
Implementation Process
Stockholm

Contentious, bumpy, expansive – with lots of policy debate and negotiation.

**Trial Management**
To avert political defeat after reneging on her campaign promise not to introduce congestion charging, Mayor Billström skillfully manages trial implementation with national funding, different city departments, private sector actors, and civil society groups.

**Voter Referendum**
To solidify administrative legitimacy and widen support for a controversial policy, citizen referendum scheduled for after Stockholmers experience full-scale experiment.

**Political Shift and Policy Reframing**
Positive referendum result binds successive Center-Right Alliance (led by the Moderates) to making charges permanent despite their previous opposition. Congestion charging framed as financing mechanism for regional transport investments (including roadway) to appeal to conservative and auto-oriented constituencies.

**Inter-Party and Regional Consensus**
Center-Right Alliance facilitates inter-party and regional consensus on the package of transportation investments to be funded by congestion charging revenues as prerequisite for parliamentary approval.

**Institutionalization**
Congestion charging becomes centerpiece of a regional transport financing system that links transportation infrastructure investments with housing and urban development in the region.
Congestion Charge: What Was Transformed?
Stockholm

Short-term Policy Success
Adoption of congestion pricing on results of a voter referendum following a full-scale trial in 2007.

Long-term Impacts
Congestion charging generates new revenue stream capable of funding future transport investments at regional scale.

Transfers of congestion charge revenue transfers to transit-oriented housing projects in Stockholm and its surrounds strengthens links between transport planning decisions and investments in housing and urban development.
## Summary Case Comparisons

<table>
<thead>
<tr>
<th>Cases</th>
<th>Scope of Transformation</th>
<th>Role of Leadership &amp; Governance</th>
<th>Implementation Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco</td>
<td>Policy Success</td>
<td>Indirect mayoral involvement; business model drives policy content; regulatory issues drive government action.</td>
<td>Closed, narrow, and relatively short-term negotiation between industry stakeholders and technical experts with concerns beyond city level.</td>
</tr>
<tr>
<td>Stockholm</td>
<td>Policy Success + Enhanced Institutional Commitments and Capacity.</td>
<td>Enduring and highly visible mayoral involvement; policy framing and communication tactics mold strategic alliance building with political parties, regional and national authorities, private sector, civil society groups.</td>
<td>Open, contentious, expansive, and extended debate among actors and institutions over an extended period of time.</td>
</tr>
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FINAL REFLECTIONS

What mobility solutions produce the cities we want, and how do we achieve them?
Technological Utopia?
GM Futurama exhibit at 1939 World Fair in NY
Car-Centric Dystopia
Boston, MA
Auto-Oriented Cities

20th Century
Vehicular technology → Auto-oriented city

21st Century
ICT + Vehicular technology → (Auto-oriented) city?
What if we instead thought about the kind of city we want and then envisioned mobility systems that lead us there?
Thank You!
Planning for disruptive transport technologies: how prepared are Australasian transport planning agencies?

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

Governing the Smart Mobility Transition
WCTRS/ITF Leipzig 30 May 2017
“the importance and – even more, the possibility – of the application of conscious choice to city formation is exaggerated”

When they leave a negotiating room nothing is left on the table, not even the Laminex. They just have this reputation for being superb negotiators at the taxpayers expense.

former NSW auditor general Tony Harris

Market-led proposals

Overview
The Government has released a revised Market-led Proposals Guideline for assessing proposals from the private sector to deliver a project or service which offers something genuinely unique and of value to Victorians.

Market-led Proposals Guideline
A revised Market-led Proposals Guideline was released by Treasurer, Tim Pallas on 18 November 2015.

Projects
Find out about Market-led proposals that are currently under assessment or have been finalised.

Contact
Contact details for all questions relating to the Guideline or for potential proposals.
Transurban dividends paid to shareholders

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
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<tr>
<td>2005</td>
<td>$143m</td>
</tr>
<tr>
<td>2010</td>
<td>$324m</td>
</tr>
<tr>
<td>2015</td>
<td>$764m</td>
</tr>
<tr>
<td>2018*</td>
<td>$1.06b</td>
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* FORECAST

Source: Transurban; Morgan Stanley
"When they leave a negotiating room nothing is left on the table, not even the Laminex. They just have this reputation for being superb negotiators at the taxpayers expense."

former NSW auditor general Tony Harris

1. Uncertainty

‘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.’
2. Questioning the role of government

‘Part of it is to reconsider what the role is for government: should it be a regulator, or does it need to … step out of the way wherever possible?’

‘I would like to say one of our roles is planning to facilitate the market. But that runs the risk where we end up with market failure and situations where private firms are allowed to take advantage of the imperfect market and thwart competition. Letting the market provide can … be the mantra, but I think we’ve come part way around the circle and recognise that there needs to be that centrally planned function to facilitate public transport networks, and we need control over that.’
3. Facilitating integrated supply or accepting fragmentation

‘...an on demand model for buses rather than regular services... would give government an opportunity to re-examine the relationship they have with public transport.’

‘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 (and) how much to a centrally driven public transport service. And what obligations are on the transit authority to ... contract someone to provide a ... subsidised service, what level of regulation is needed for that?’

‘There is a growing focus on engagement with industry ... but ... where the commercial motivators of industry don’t sit well... I think that government has a role to even the balance a little bit, to ensure that the right outcomes ... for those less profit driven areas.’
4. Public sector knowledge gaps

‘The capacity of the public sector to ... understand the drivers that motivate private sector behaviour is going to be really important. A lot of the expertise is going to be held by the private sector (and when) the private sector holds expertise that the public sector doesn’t, it can be very challenging ... to drive good outcomes.... That’s something where we constantly need to be building our skills.’

‘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 ... ‘

‘The level of knowledge and understanding ... is still relatively low. ... it could be that we need to raise our skills in some form of electrical engineering or software communications, digital communications, but it’s a little early for us to know exactly what that is.’

[The civil service] is still reacting to change. There’s not that future-looking function within the organisations. There are often strategy groups but they tend to be misnomers.’
5. Fragmentation of effort

‘... all policy development requires an authorising environment ... As a bureaucracy we’re limited by the ambitions of our political masters and their willingness to (explore) innovative areas.’

‘... it cannot be done in isolation from other jurisdictions. Clearly, there can be competition for investment and jobs and the like, that’s what governments do. But when it comes to the actual technology, the way it’s being deployed, there’s got to be national consistency.

The players range from manufacturers and suppliers of AV vehicles, manufacturers of AV components, the data companies that provide services... There are suppliers of equipment and software and analytics to support integration of infrastructure with vehicles. There are the transport service providers, ... There are multiple portals in place and ... there could be better governance to establish the links between these and a public description of each... but there’s a bit of competitive tension at the moment which isn’t a bad thing.’
Governing the Smart Mobility Transition: the experience of two UK Local Authorities

30 May 2017

Dr Richard Southern
Dr Scott Copsey
Overview of Presentation

- How to deliver a smart mobility solutions in order to overcome governance capacity issues
- Two case studies approach – Hertfordshire and Northamptonshire
Context

- Hertfordshire – Voluntary Quality Partnership Model (QP)
- Northamptonshire – Social Enterprise Model (SE)
- University of Hertfordshire as agent of delivery
County of Hertfordshire

- Mix of rural villages & large towns
- Close to London (regulated public transport environment)
- Surrounded by 3 main airports
- Dissected by a number of major road links
- Serviced by two main bus operator including UNO & one train operator (de-regulated environment)
The Hertfordshire CC Context

- First major challenge was delivering £150m budget cut from 2010
- Going forward - further £120m!
- Therefore need to think ‘outside the box!’
- This environment led to the need to rethink integrated transport provision, and the QP approach was adopted following the 2000 and 2008 Acts
- Herts CC a deregulated environment
Quality Partnership Structure

- How was it set up?
- Who was involved?
- What did it do?
- How did it use smart solutions?
- What were the outcomes?
- What next?
St Albans Quality Partnership Network

- Increased frequency on
- Key bus routes
- New peak period timetable on inter-urban services
- Route branding to market services and interoperable ticket
We also improved bus information

- Real Time /AVL buses project, covering 90% of commercial network
- Bus stop/route specific timetabling introduced
- Smart Phone App (Real time & timetabling)
- Extensive marketing work using digital media delivering………. 
Smart Ticket Project

- Partnership between HCC/UH (& UNO)
- Natural progression from other mobile phone applications (timetabling & real time)
- Simple & fast mobile ticketing
- Easy to get setup with ticketing/service information
- Quick integration with Real-Time information
- Improves boarding times & punctuality/frequency
- Includes more flexible ticketing options
- Cost Savings!
Smart m-Ticketing technology
M-Ticketing benefits

- Reduced boarding times (up to 1/3)
- Patronage up
- Deployment in Cranfield/ Northampton owing to demand
- Potential for user data to be scrutinised to inform business decisions
- Further development of App concept to encourage behaviour change, including
  - On demand services (rural/off-peak travel)
  - Dynamic ticketing
  - Nudge Rewards working with local business
Northamptonshire CC – key stats

- Highly developed business infrastructure (high tech engineering (e.g. F1) & food manufacturing)
- Population of c700k
- Northamptonshire County contains circa 1,400 logistics organisations, which is approximately 10% of the overall counties workforce.
- Many public bodies using tax-payers money to commission transport (c. £60m spend)
- Lack of cooperation and coordination
- While individual contracts might be logical…
- …Net effect is sub-optimal
Social Enterprise Model Approach

- Social Enterprise is a form of business with governance structures (board, shares etc.)
- Can procure transport holistically on behalf of partners
- Social impact is doing ‘good stuff’ that helps people and/or the environment
- Social impact is the purpose of Social Enterprise
- Any organisation can deliver social impact
The opportunity for smart solutions

- New organisation aims to be digitally ‘smart’
- County-wide data gathering and analysis
- Use of information to procure transport
- Collaborative, intelligent, integrated
- More customer-centric, more efficient, less public funding
- Delivery of social impact & carbon reductions
Smart solutions offer the opportunity to deliver the transition to overcome governance capacity issues.

Local authorities no longer have governance capacity to deliver smart solutions, so the social enterprise model was developed, using learning from the QP in Hertfordshire.
Intended Outcomes

- Increased passenger numbers
- (Partially integrated) modern ticketing
- Better usage of total fleet
- Social impact/carbon reduction
- Transformative open relationships between commissioner and operators
- Develop smart platforms....
Corethree Platform provides...
Opportunities Going Forward

M-ticket HCC/UNO App

Intelligent Mobility/Shared Transport

Bus Services Act 2017 – Opportunities for Integrated, Multi-Operator/Modal Smart Ticketing?
Future Governance Capacity

- New governance models formed to create framework for smart solutions where traditional governance structures no longer have capacity/funding
- Smart ticketing: new governance has more effective powers to impose multi-operator/modal ticketing
- Enhanced partnerships fostered
  - Transport service registrations
  - Broader scope of governance – not just infrastructure
  - So, ‘TfL in the shires’?… but without the budget!
Conclusions - Overcoming Governance Capacity Issues

- Quality Partnership – LA and Operator led
  - Voluntary
  - Impacts reduced when funding decreased
  - Loss of LA Skill based

- Social Enterprise
  - Pools budgets/ Joint procurement
  - Integration through use of Smart based Solutions
  - Re-invest % of any profits
Wider Conclusions

- It is possible to influence the (public) transport infrastructure using a new governance model.
- Large organisations can help do this in many ways, joint procurement forms an integral part of travel planning.
- New governance must look at transport networks holistically to allow for better efficiencies and user experience.
- Research in how the new governance models to influence modal shift projects (nudge behaviour, links with India and Africa).
- New governance models can aid in securing funding for new projects.
- The new technology being utilised can act as an enabler for modal shift in the light of demographic change and increased shared mobility/economy.
Thank You

Questions?

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