

3. Urban Transport – shift to more efficient modes

John Dulac Paris, 21 May 2019



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3. Urban Transport – Shift to more efficient modes

Trainer(s): John Dulac

Scenario: Demand for mobility in your city/municipality is increasing

Question: What are the ways to increase mobility through more efficient forms of transport?

Training Overview



1. Energy use, drivers, and impacts of transport

- Urban transport issues and impacts
- A case for action in urban transport
- Transport Concepts: Avoid, Shift, Improve

2. 'Shift' policies

- Policy case studies on 'shift'
- Strategies to shift to more sustainable modes of transport

3. Activity

30 mins

10 mins

40 mins



1. Energy use, drivers and impacts of transport

Transport issues in urban areas



Where to start? Tools What are the step

Urban mobility is an increasingly critical issue







Low level of bus services in Hanoi, Viet Nam

Congestion in Jakarta BRT Station

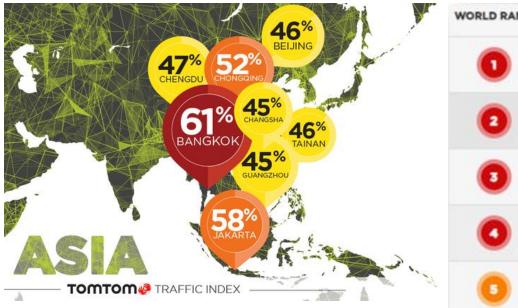
Congestion in Hanoi, Viet Nam

Transport issues in urban areas



Where to start? Tools What are the steps

 Asian cities occupy three of the top four places; over half the world's top ten most congested cities are located in Asia.





Top 10 most congested cities across Asia

A case for action in urban transport: air quality



Where to start?

ools

/hat are the steps:

NEWS > CITY

Jakarta has most polluted air in Southeast Asia: Study

News Desk

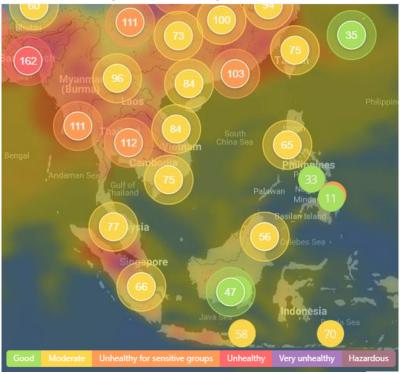
The Jakarta Post

Jakarta / Fri, March 8, 2019 / 03:29 pm



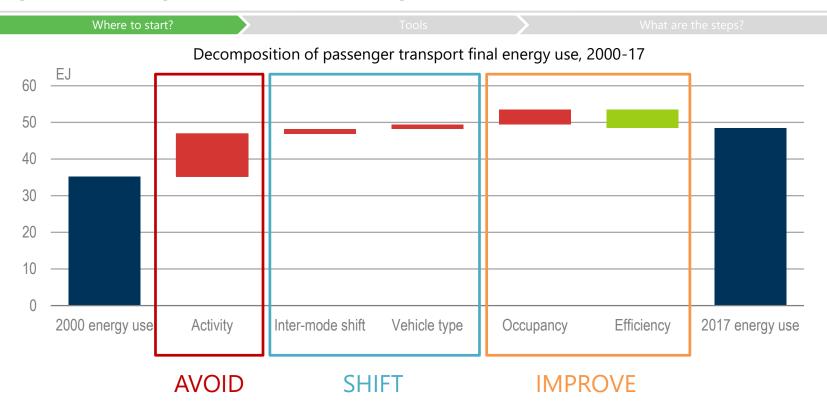
Smog blankets Jakarta's skyscrapers. Air pollution in the city is the worst in Southeast Asia. (The Jakarta Post/Wendra Ajistyatama)

Air Quality Index: PM2.5 Air Pollution – March 19, 2019 (WHO PM 2.5 guideline - 25μg/m³ 24-hr mean)



Transport concepts: avoid, shift, improve





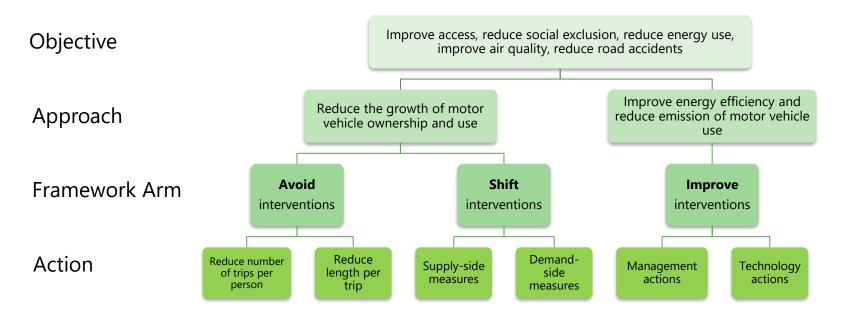
Global transport activity is rising and behaviours are shifting to less efficient practices. Strategies to address this could be classified as Avoid, Shift, and Improve

Avoid-Shift-Improve Concept



Where to start? Tools What are the steps

Municipalities can encourage an **integrated approach** to sustainable urban mobility that encompasses 'avoid', 'shift' and 'improve' actions:



Source: Adapted from ESMAP - https://openknowledge.worldbank.org/bitstream/handle/10986/21305/936760NWP0Box30oralNote0Transport04.pdf?sequence=1 IEA 2019. All rights reserved.

Avoid Options



Where to start? Tools What are the ste

We covered these in SESSION 2 Energy Efficient Urban Planning

- 'Avoid' strategies address transport energy use and emissions by slowing travel growth via city planning and travel demand management
 - Urban design and mixed land-use planning
 - Compact development policy

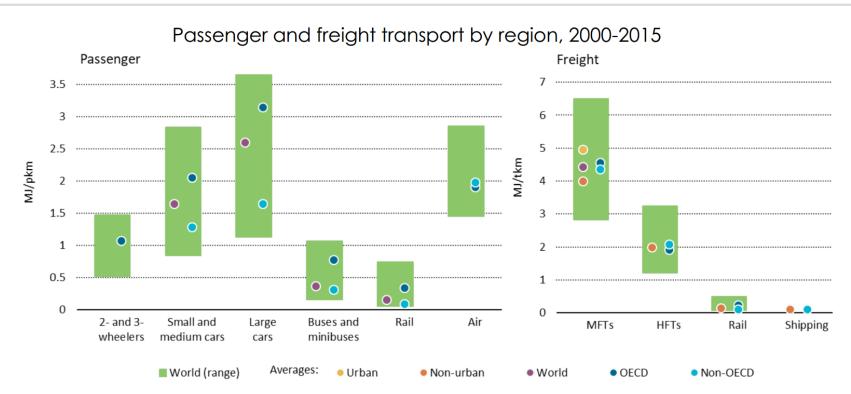






Why Shift?





Energy intensity of transport can be separated based on the form of transport used (i.e. mode).

What shifts mode?



Where to start? Tools What are the ste

- These strategies and policies enable and encourage movements from motorised travel to more energy efficient forms of transport, such as public transit, walking, cycling and freight rail:
 - Increasing the public transport capacity (e.g. BRT)
 - Improved bus routes and services
 - Congestion and road charges (e.g. roadway tolls)





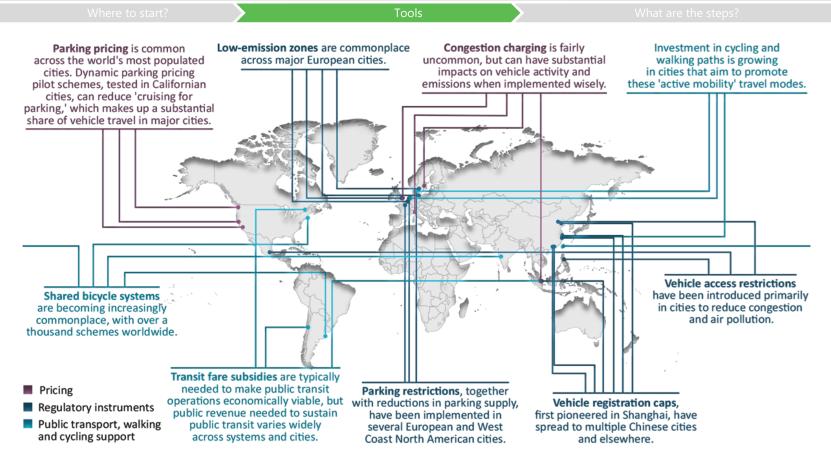




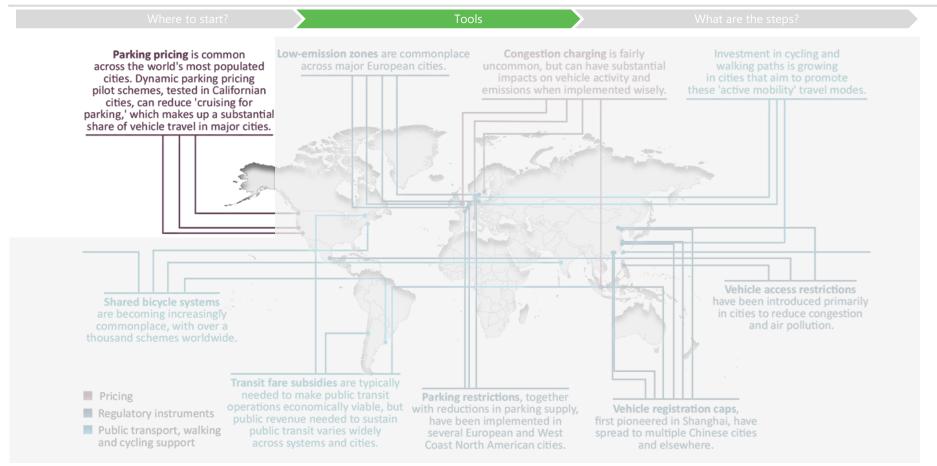
2. 'Shift' policies

Sustainable shift mode policies in cities

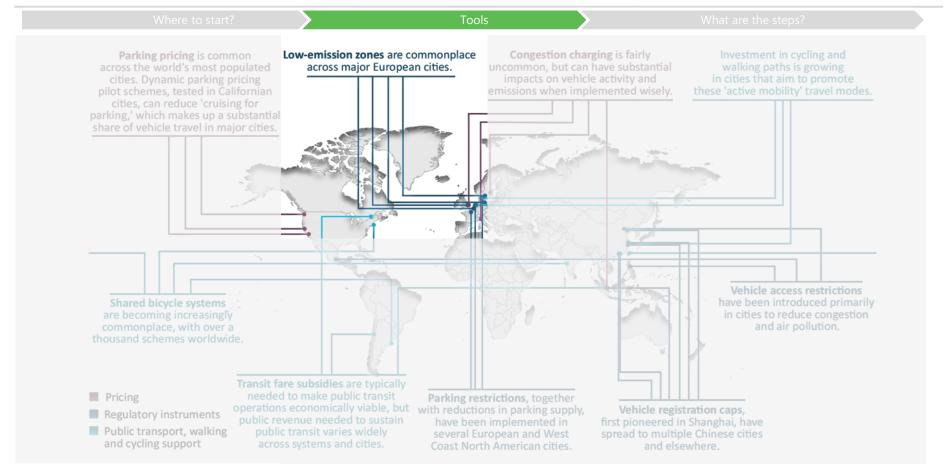




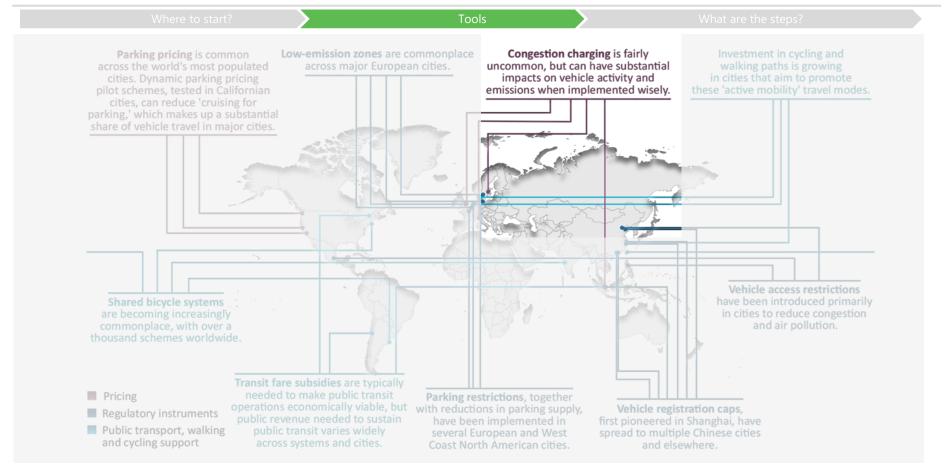




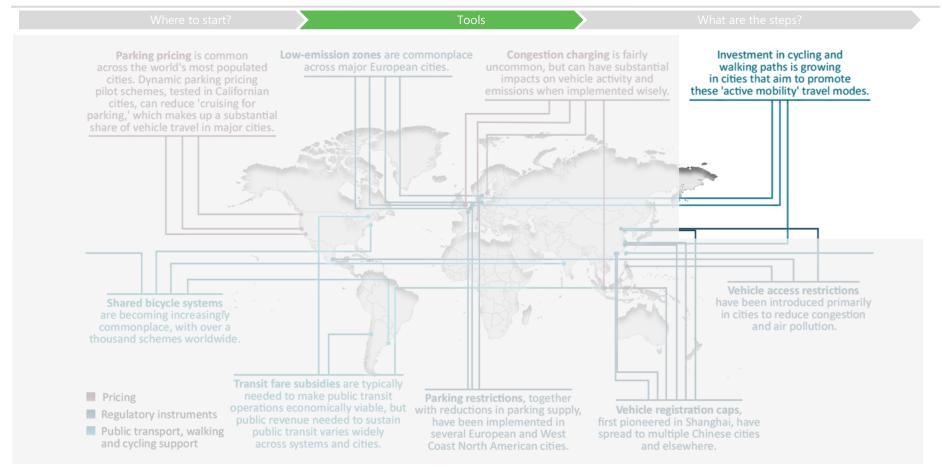




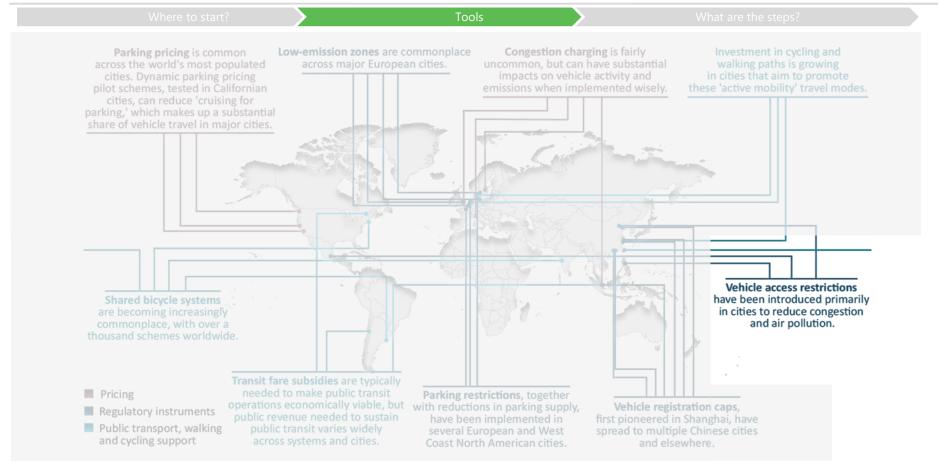




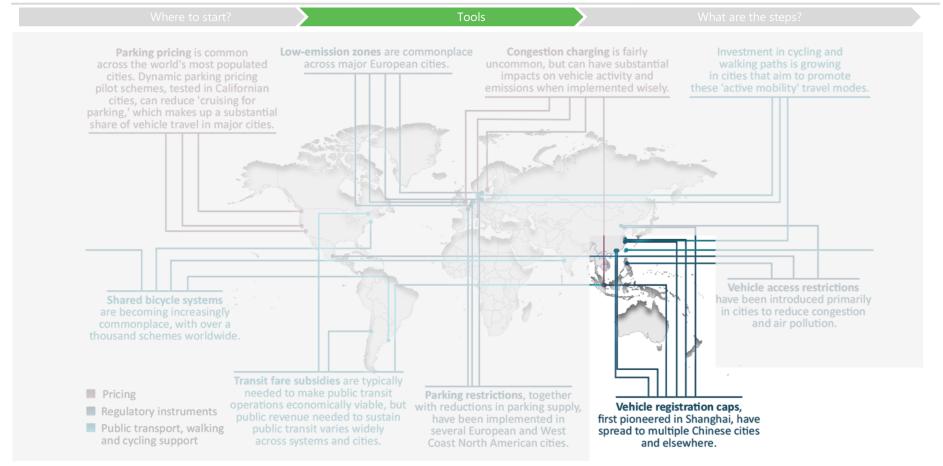




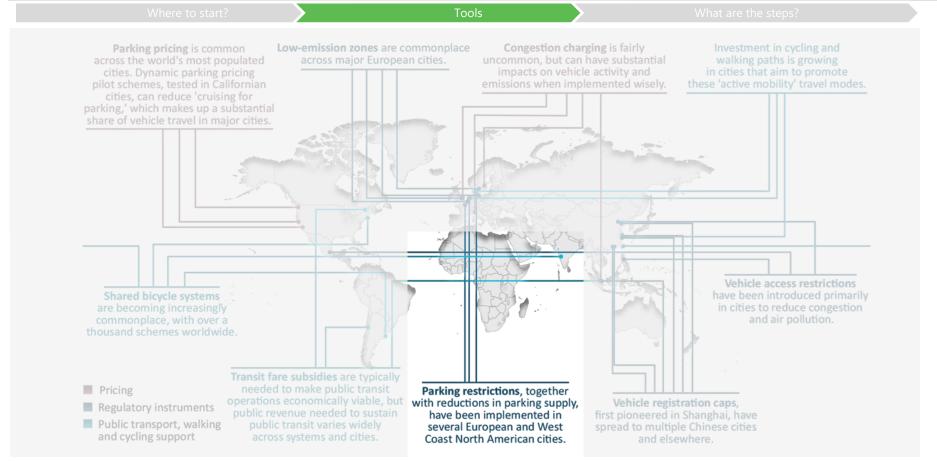




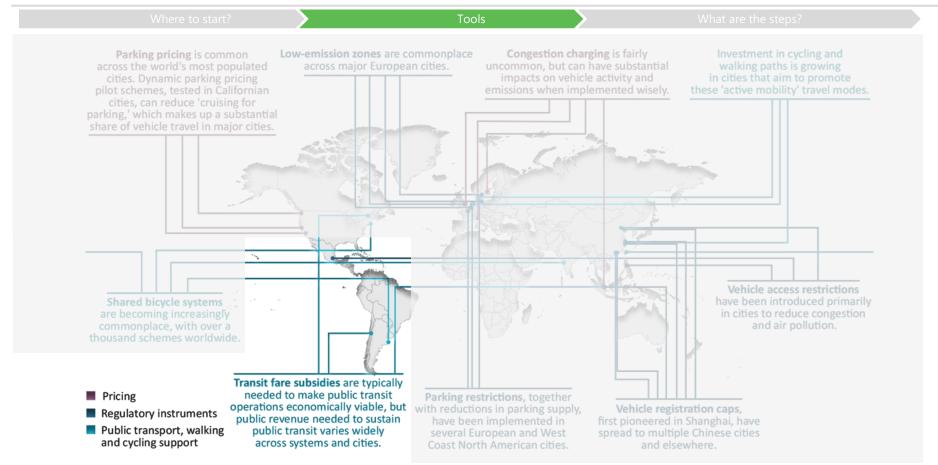




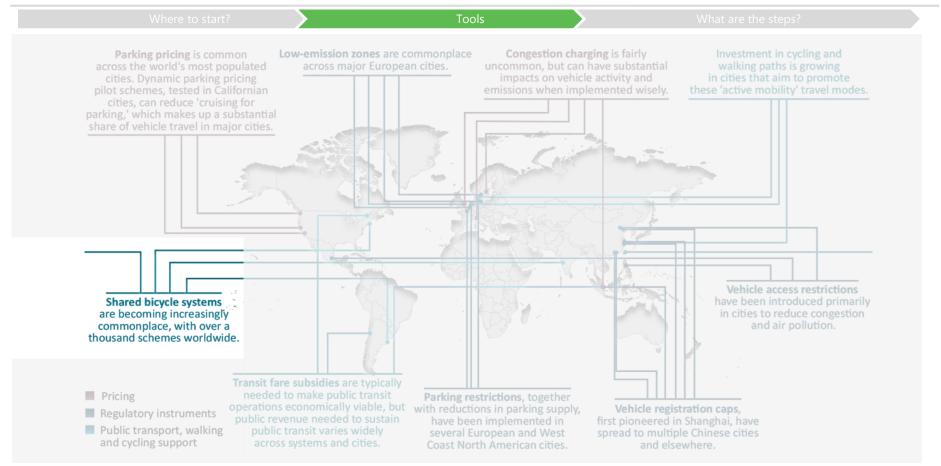












2. 'Shift' policies



Where to start? Tools What are the ste

Make more efficient modes of transport...

Regulatory / Institutional

Available to use

Economic

Cheaper to use

Information / Capacity

- Known
- Popular
- Easy to understand

2. 'Shift' policies



Where to start? Tools What are the steps

- **Provide** sustainable public transport
 - Mass transit
 - Bike parking areas
- "Share" the road with more sustainable modes (cycling, walking, pedicabs)
- Provide seamless integration between different sustainable modes (bus, BRT, rail, cycling, walking)

Regulatory / Institutional

Available to use

Case Study: BRT Planning in Jakarta



Where to start? Tools What are the steps?

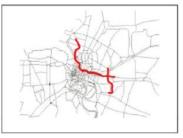
• ITDP Project: Increasing public transport given limited funds (1/3)



Koridor BRT 426 km



14 Km Elevated Metro



40 Km LRT



7 Km Underground Subway

What can you build with \$ 1 billion?

HUGE APPETITE FOR MOBILITY



PRIVATE VEHICLES



LIMITED PUBLIC RESOURCES



LACK OF SPACE, FUNDING, DATA AVAILABILITY

START FROM WHAT WE HAVE

Regulatory / Institutional

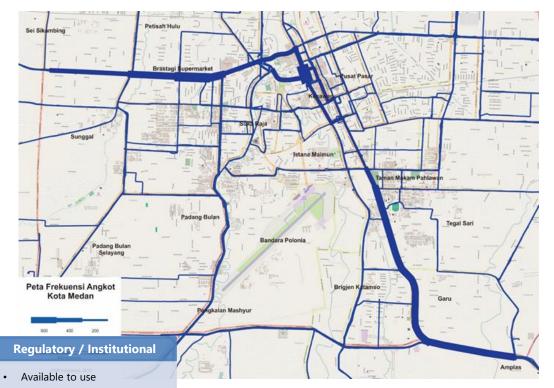
Available to use

Case Study: BRT Planning in Jakarta

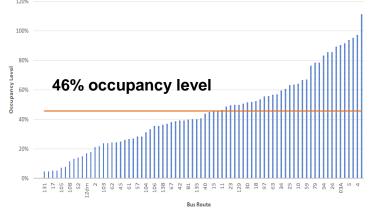


Where to start? Tools What are the steps?

• ITDP Project: measuring based on existing frequency and occupancy (2/3)







Case Study: BRT Planning in Jakarta



Where to start? Tools What are the steps?

• ITDP Project: Proposed BRT line and execution (3/3)





2. 'Shift' policies



Where to start? Tools What are the steps:

- Congestion pricing
- Road pricing to reflect environmental cost of road use
- Taxes on private vehicle use, or subsidies for public transport investment

Economic

Cheaper to use

Congestion Charging



Where to start? Tools What are the steps?

Congestion charge as pay for service:



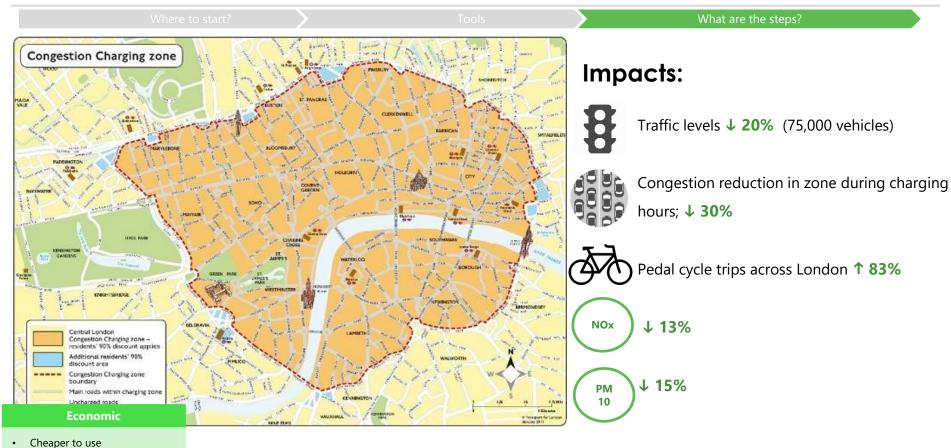






Congestion Charge: The Case of London





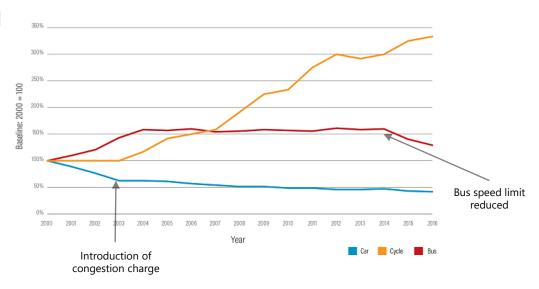
Congestion Charge: The Case of London



Where to start? Tools What are the steps?

- What worked:
 - Centralised institutional structure and strong political will
 - Extensive public communication
 and consultation
 - Improved public transport and fare integration

Change in Surface Transport Shares, London 2000-2016



Economic

Cheaper to use

Congestion Charge: The Case of French Cities





Economic

Cheaper to use

Tools What are the steps?

- Announced by French government in draft transit bill in October 2018
- To introduce London-style city centre tolls
- Would require car drivers to pay a toll in cities
 with more than 100,000 people
- → Limit car traffic and fight against pollution
- Local authorities...
 - ... expressed opposition (Toulouse & Marseille)
 - ... would charge visitors but not residents (Lyon)
 - ... might consider (Paris)

Congestion Charge: The Case of French Cities



Where to start? Tools What are the step

France scraps plan for city centre congestion charges



Photo: AFP

The much-hyped plan to charge motorists to get into France's large cities and towns has been scrapped by the government after fears it may have created more anger and economic ptests.



· Cheaper to use

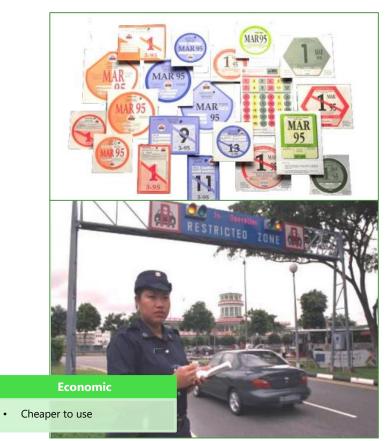
Automation of the Electronic Road Pricing Scheme, Singapore



Where to start?

ools

Vhat are the steps?

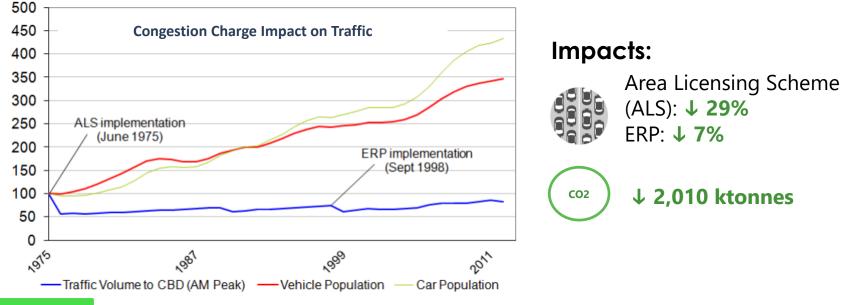




Automation of the Electronic Road Pricing Scheme, Singapore



 The Electronic Road Pricing (ERP) Scheme has been a key policy tool in reducing and keeping low sharp peak traffic volumes



Economic

Cheaper to use

2. 'Shift' policies



Where to start? Tools What are the steps

- Promote sustainable urban transport (SUT) and build it as a brand over private car use
- Nudge behaviour towards SUT
- Provide easy accessible information on SUT even while starting from informal transport services

Information / Capacity

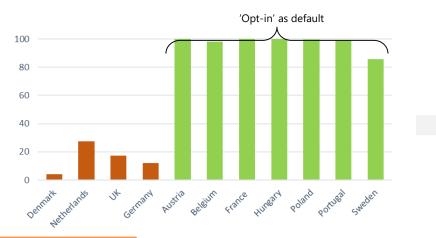
- Known
- Popular
- Easy to understand

Behaviour change to incentivise shift mode

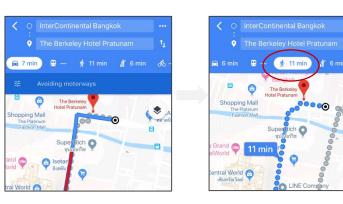


Where to start? Tools What are the steps?

- Using 'nudging' to promote sustainable travel behaviour
 - Bounded rationality: Our decisions are restricted by time, energy and willpower
 - **Heuristics and Biases**: We use mental shortcuts heuristics in our decision-making process but we are vulnerable to biases



Organ donor rates



Making walking option the default

Information / Capacity

- Known
- Popular
- Easy to understand

Source: Adapted from Beworks Presentation (2019)

Behaviour change to incentivise shift mode



Where to start?

Tools

What are the steps?

- Promoting behaviour change for sustainable transport modes in Vienna
 - Large city-centre festival for citizens on car-free streets
 - Rickshaw cycling for residents through recreation zones
 - 'Walking cafés' walking groups through city with lectures and activities
 - Resident gatherings at intersections cheering passing cyclists
 - Safety training for children

VIENNA (AUSTRIA)









Information / Capacity

- Known
- Popular
- · Easy to understand

Behaviour change to incentivise shift mode



Where to start? Tools What are the steps?

- Digitalisation for behaviour change: <u>BetterPoint technology</u>
 - deliver incentivised behavioural change programmes through a smartphone app



Impacts of shift to sustainable transit (over 6 months):

- Bologna, Italy:
- 711 tonnes CO2 emissions saved
- Sutton Council, UK:
- 7.25 tonnes CO2 emissions saved

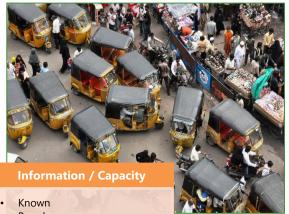
Source: Adapted from BetterPoints website

How ICT brings informal transport services into mainstream



What are the steps?

- Significant usage of informal public transit in southeast Asia
 - Carry millions of passengers daily
 - Not easily regulated sector
 - Provides public transport capacity that puts a check on vehicle congestion







Popular

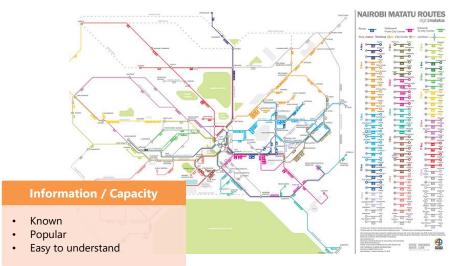
Easy to understand

How ICT brings informal transport services into mainstream



Where to start? Tools What are the steps?

- Opportunities:
 - Streamlined routes mapping the informal system
 - E.g. smartphones and GPS to document routes and translate data into info for traffic Apps



- "Apping" where informal transport options can be hailed with an app
 - E.g. request EZGo tuk tuks via PassApp in Cambodia



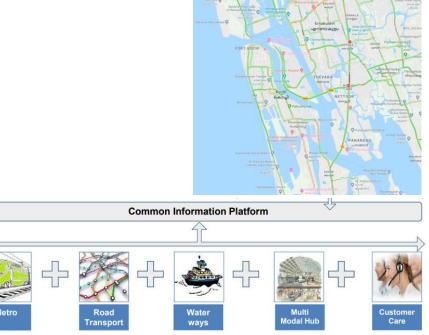
Multimodal Integration, a mobility management concept



Where to start? Tools What are the steps?

Case Study: Kochi India – transport hubs to integrate different transport services





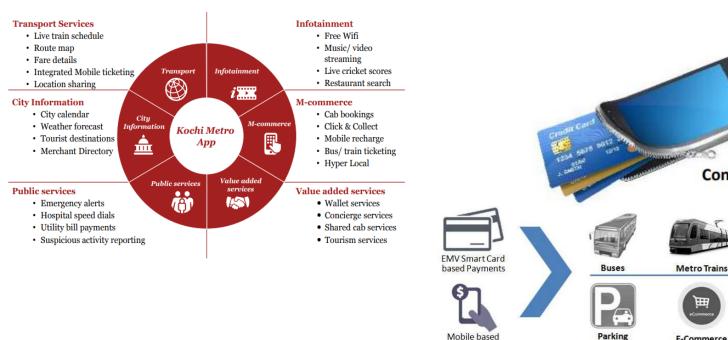
Multimodal Integration, a mobility management concept



What are the steps?

Payments

Case Study: Kochi India – APPS and IT integration to make it easy





"Shift" policies



Whare to start? Tools What are the steps

• "Shift" objectives and policy responses:

Objectives	Policies
Shift passenger travel to public transport and NMT	 Integrated public transit and land-use planning Improved bus routes and services Parking restrictions
Prevent passenger shifts to motorised transport	 Pricing strategies (e.g. congestion charges, vehicle quotas/bidding system for plates, and fuel/vehicle taxes) Traffic restrictions and travel bans in city centres Road space allocation: dedicated lanes for buses, BRT and bicycles. More sidewalks, crossings and overpasses for pedestrians Congestion and road charges (e.g. roadway tolls)
Shift freight transport from trucks to rail and water transport	 Standards for size and weight of vehicles authorised on roads Logistics management technology

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Source: IEA Tale of Renewed Cities Report

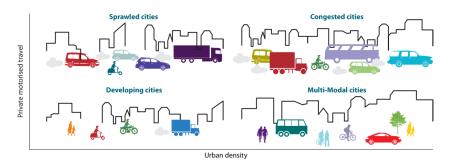


4. Activity

ACTIVITY



- 1. Think about the context of public transport and modal shares in your city \
- 2. On post-its, write down the avoid/shift strategies that fit in your city to increase the share of non-motorised transportation (1 idea per post-it; 3 ideas)
- 3. Stick it here \rightarrow



4. In 4 groups – one per city type – what factors might limit the uptake of public transit and non-motorised transport in these contexts? How might they be overcome?

Policy Pathway



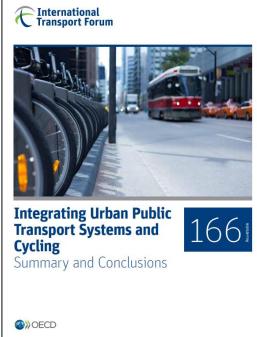
Where to start? Tools What are the step

IEA policy pathway to improve energy efficiency in urban transport systems

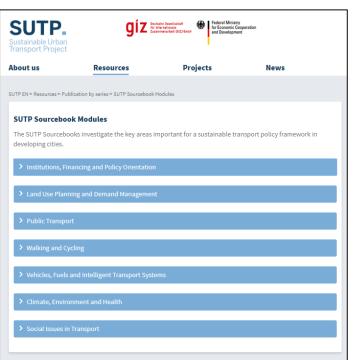
		DONE
PLAN	Identify transport needs and define objectives	0
	2 Identify and engage stakeholders early on	0
	Address potential barriers and secure necessary resources	0
	Establish policy framework and action plan	0
IMPLEMENT	5 Engage actors and begin implementation	0
	6 Raise awareness and communicate targets	0
	Manage implementation process	0
MONITOR	Collect, review and disseminate data	0
EVALUATE	Analyse data and evaluate effects of transport policy	0
	Adapt transport policy and plan next steps	0

Key Resources

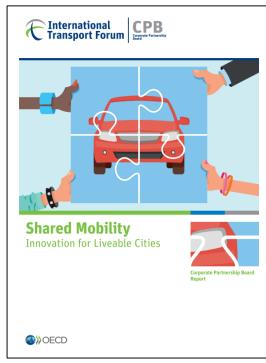








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https://www.itfoecd.org/sites/default/files/docs/shared-mobilityliveable-cities.pdf

