



Opportunities in urban mobility: Mobility-as-a-Service

@ SIEW 2018 ERI@N Think Tank Roundtable

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2 Nov 2018



Higher Expectation for Urban Mobility



Urbanisation

Challenge for transport infra and services to keep pace with rapid city growth



Demographics & Lifestyle

Changing demographics and millennial perspective towards transportation and car ownership



Sustainability

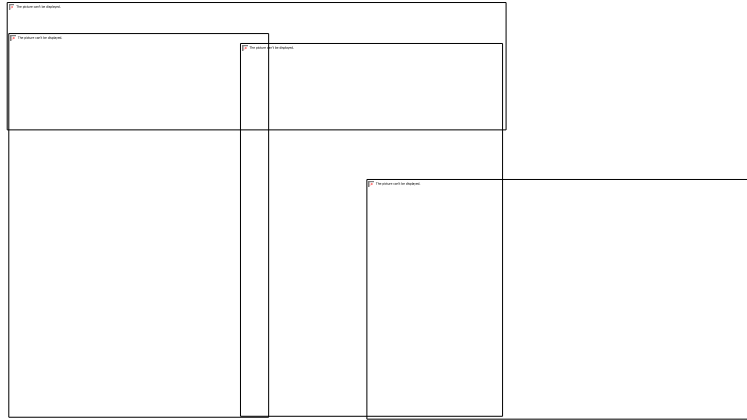
Limited resource to support economy and population growth with environmental consciousness



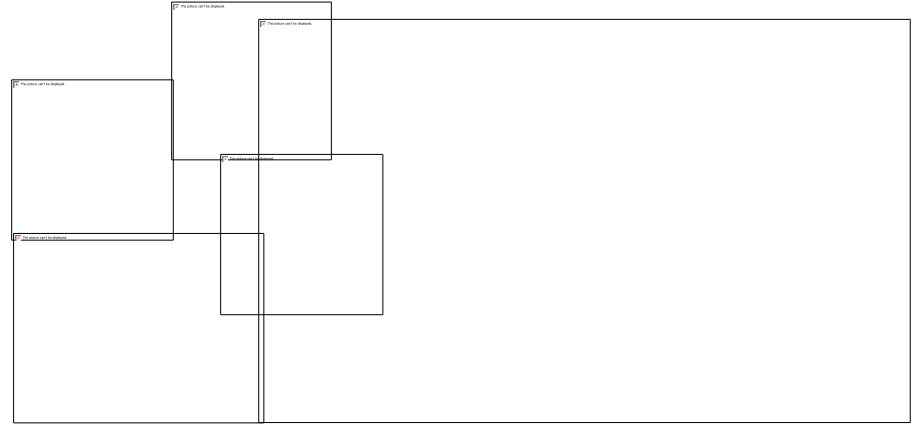
Adjacent Industries

E-commerce and Logistics are changing traffic patterns

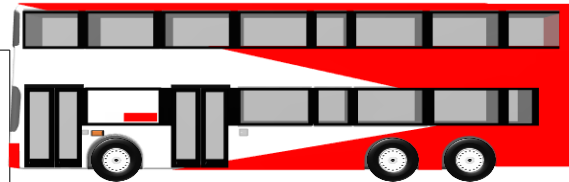
Rapid Innovation in Urban Mobility



On-demand service...



Sharing economy...



Electric mobility...

A Revolution is Coming ...

AUGUST 16 TSLA: 223.61 100
Ford announces plans for fully autonomous cars in high-volume available in 2021

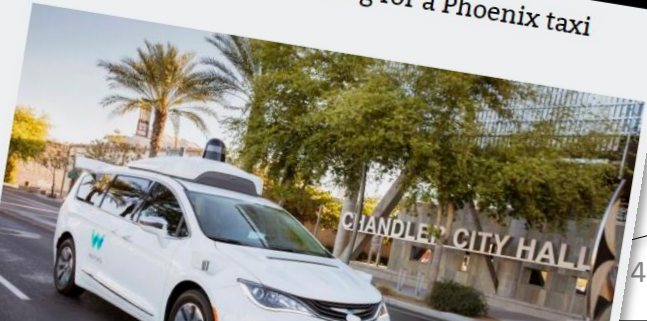
Why Did Baidu Invest \$75M In Driverless Car Tech Firm Velodyne LiDAR?
Tycho De Feijter, CONTRIBUTOR
ENTER ABOUT THE CHINESE CAR MARKET: TSLA BID

UBER Newsroom
Uber China Merges with Didi Chuxing
August 1, 2016 | Posted by Travis

Autonomous Vehicle (AV) is becoming real – even faster than what we had expected ...

ANNUAL CRUNCHIES AWARDS See Who Will Take Home Top Honors At Our Tech Awards
Uber and Volvo put \$300M into building self-driving cars ready for sale by 2021
Posted Aug 18, 2016 by Darrell Etherington (@etherington)

Waymo spent 2017 preparing for a Phoenix taxi service



Exciting, but more & more complex for commuters

Today

Multiple Apps to plan, book & pay

Multiple wallets & payment processes

Different pricing schemes by operators

Plan your own trip / go without planning

Different players & platforms



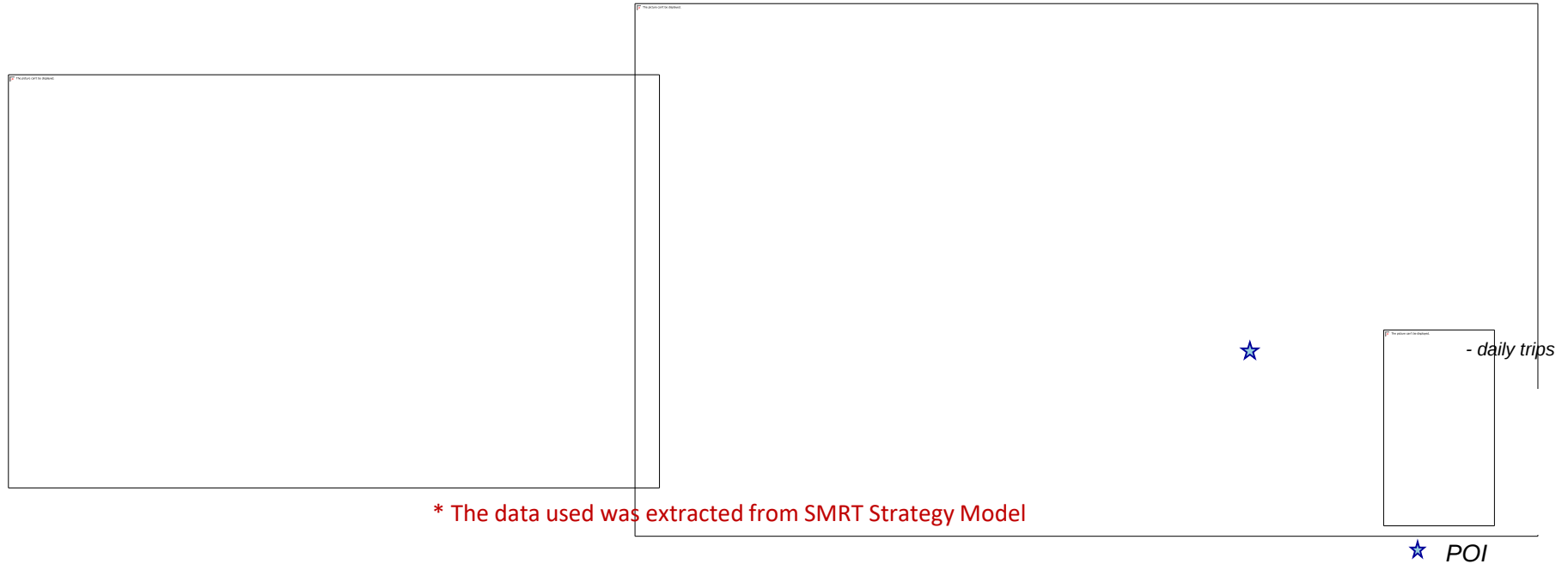
How to simplify
urban mobility to best
benefit commuters ?

Simplifying urban mobility

Our mobility platform enables convenient **end2end** journeys
for individuals

Using **data** and **technology**, we optimise transport networks
across modes to enhance the individual experience

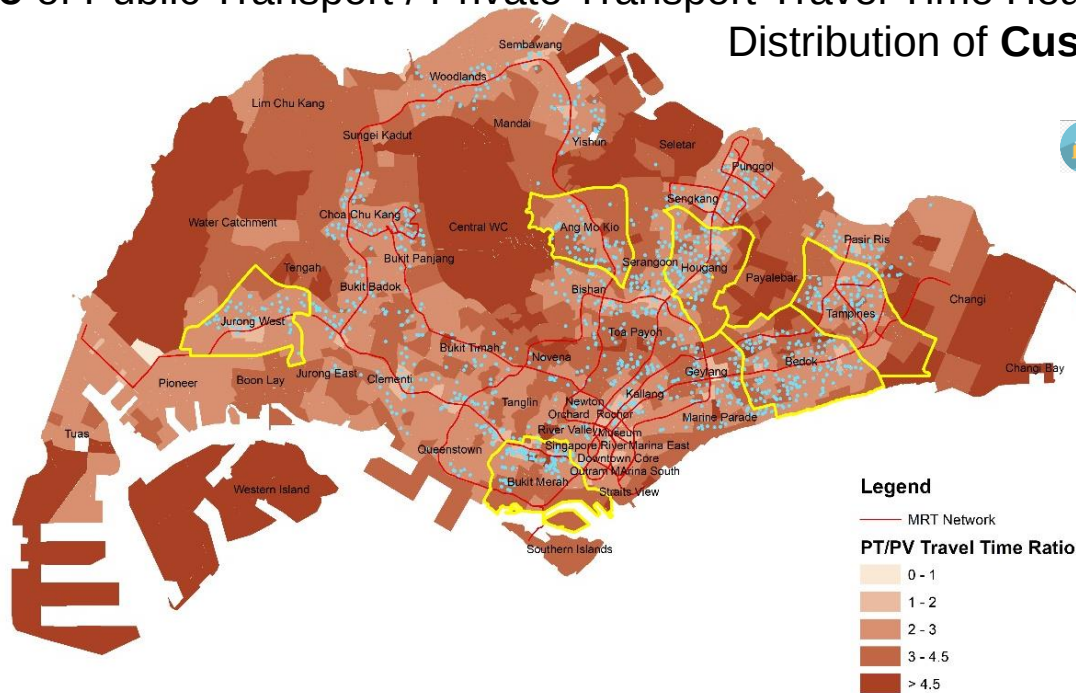
Public Transport Demand Analytics



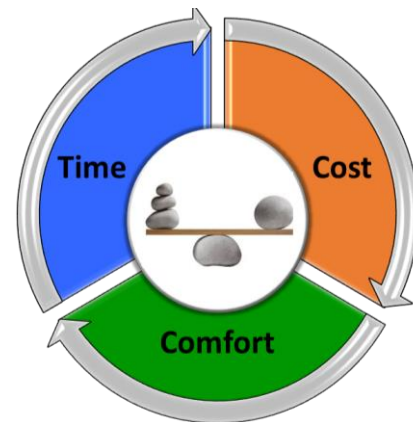
- Provides a good understanding on travel demand and behavioural patterns and helps identify transport gaps

Transport Accessibility Analysis

Ratio of Public Transport / Private Transport Travel Time Heatmap & Distribution of Customers



Identifies areas with deficient Public Transport and potential demand for better services

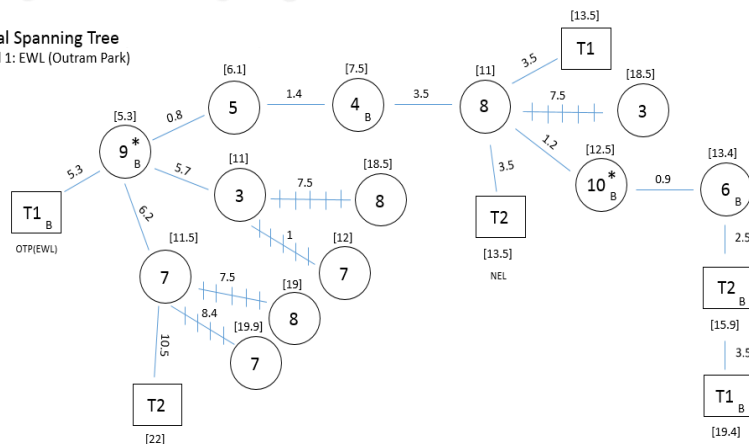


* Data came from various sources, including SMRT Strategy Transport Model, survey company, mobilityX's partners and clients.

Smart Service Planning – leveraging latest technology

- Enables testing on **all** possible routes that fulfill the customised **rules & conditions**, to identify the **best** one in accordance with the definition of **optimisation**.

Internal Spanning Tree
Terminal 1: EWL (Outram Park)



Node 6 -> 8; Lowest 9 ; Tolerance 18
(6, 5, 22, 23, 24, 25, 8) 9
(6, 3, 4, 21, 22, 23, 24, 25, 8) 13
(6, 5, 22, 21, 28, 11, 29, 23, 24, 25, 8) 14
(6, 3, 4, 21, 28, 11, 29, 23, 24, 25, 8) 16

Node 8 -> 1; Lowest 6 ; Tolerance 12
(8, 24, 7, 1) 6

Lowest Value / Tolerance

Node 1 -> 2; Lowest 3 ; Tolerance 4.5
(1, 2) 3

Node 1 -> 3; Lowest 11 ; Tolerance 16.5
(1, 2, 27, 10, 3) 11

Node 1 -> 4; Lowest 12 ; Tolerance 18.0
(1, 2, 27, 10, 3, 4) 12

Node 1 -> 5; Lowest 14 ; Tolerance 21.0
(1, 2, 27, 10, 3, 6, 5) 14
(1, 2, 27, 10, 21, 22, 5) 14
(1, 2, 9, 26, 25, 24, 23, 22, 5) 17
(1, 2, 27, 10, 3, 4, 21, 22, 5) 18
(1, 2, 9, 26, 25, 8, 24, 23, 22, 5) 18
(1, 2, 27, 10, 21, 28, 11, 29, 23, 22, 5) 19

Node 1 -> 6; Lowest 13 ; Tolerance 19.5
(1, 2, 27, 10, 3, 6) 13
(1, 2, 27, 10, 21, 22, 5, 6) 15
(1, 2, 9, 26, 25, 24, 23, 22, 5, 6) 18
(1, 2, 27, 10, 3, 4, 21, 22, 5, 6) 19
(1, 2, 9, 26, 25, 8, 24, 23, 22, 5, 6) 19

Node 1 -> 7; Lowest 14 ; Tolerance 21.0
(1, 2, 9, 26, 25, 24, 7) 14
(1, 2, 9, 26, 25, 8, 24, 7) 15
(1, 2, 27, 10, 21, 22, 23, 24, 7) 17
(1, 2, 27, 10, 21, 28, 11, 29, 23, 24, 7) 20

Node 1 -> 8; Lowest 11 ; Tolerance 16.5
(1, 2, 9, 26, 25, 8) 11

Node 1 -> 9; Lowest 5 ; Tolerance 7.5
(1, 2, 9) 5

Node 1 -> 10; Lowest 9 ; Tolerance 13.5
(1, 2, 27, 10) 9



Mobility-as-a-Service (MaaS) is the Solution

Today

Multiple Apps to plan, book & pay

Multiple wallets & payment processes

Different pricing schemes by operators

Plan your own trip / go without planning

Different players & platforms



mobilityX for MaaS

Only one App to plan, book & pay

Simple payment experience

Access to discounted packages

App tailors a route for your needs

Integrated eco-system for all parties

General statistics of mobilityX's MaaS testbed

40,000 people live, work and study on the testbed district

275 days into testbed operations

More than **10,000** unique registered app users

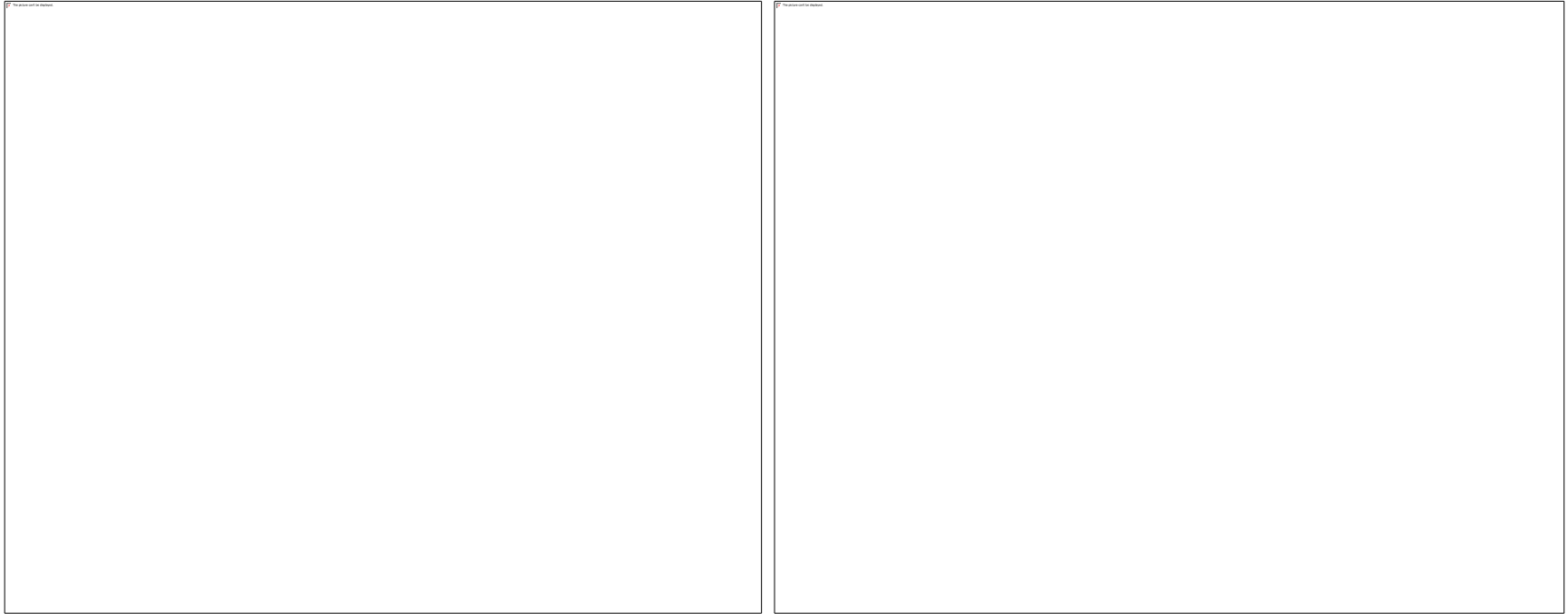
7 transport modes are incorporated in the testbed app, including Autonomous Vehicle, e-scooter sharing, bike sharing, campus shuttle bus, on-demand buses, e-bikes and walking.

4,300 users has made deposit of 20 SGD with jalan²

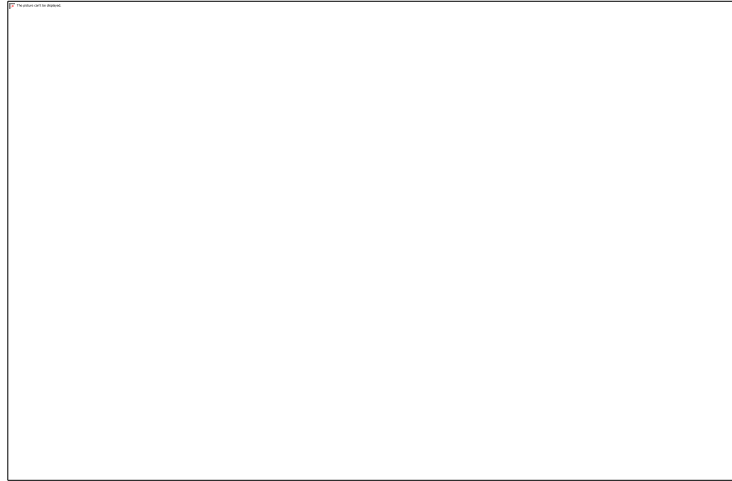
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mobilityX: Series A investment



National Plan for Mobility-as-a-Service



1) Insert start
& end points

2) Choose your
ideal route

3) Start your
journey

- ✓ Door-2-Door trip planning and booking (across all modes)
- ✓ Offering subscription plans to meet the varying needs of commuters
- ✓ Cost, convenience and time are presented for decision making
- ✓ Personalisation enabled by advanced analytics

Simplifying Urban Mobility

Thank you

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