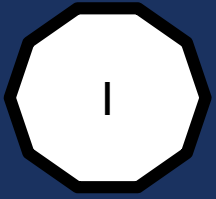




# JTTRI INTERNATIONAL SEMINAR ON UTILIZATION OF MOBILE PHONE BIG-DATA (MBD) FOR THE TRANSPORT SECTOR

KELVIN NG,  
LAND TRANSPORT AUTHORITY  
BANGKOK, 16<sup>TH</sup> JAN 2020



# PRESENT SITUATION IN SINGAPORE



Total  
Population :  
5.7 million



Mobile Phone  
Subscriptions :  
8.39 million



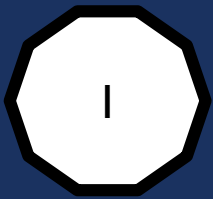
Mobile Data  
Usage : 226  
petabytes



Mobile Population Penetration Rate  
148%

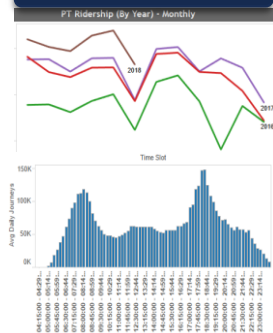
Individual Internet Usage  
87%



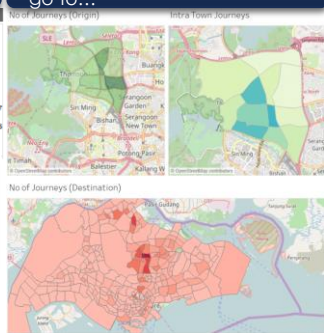


# PRESENT SITUATION IN SINGAPORE

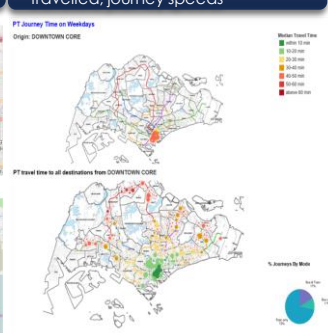
## Trends and patterns



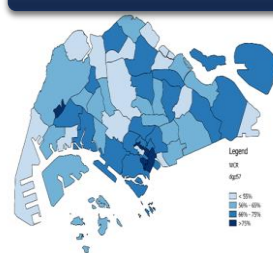
## Where people are from and go to...



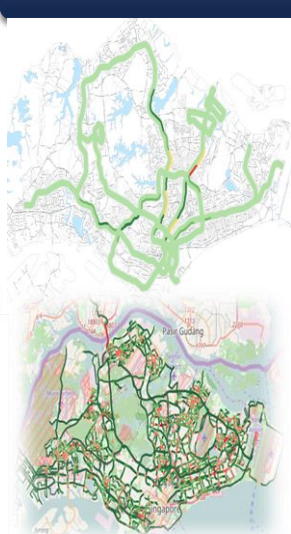
## And the time taken, distance travelled, journey speeds



## Mode share



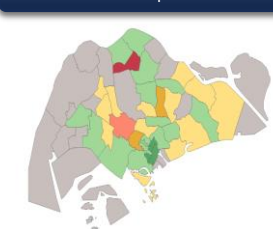
## Demand vs supply



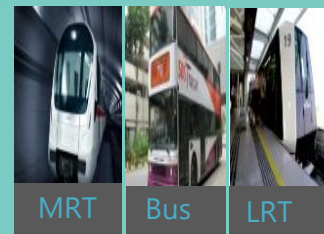
## Impact of new development



## Car ownership



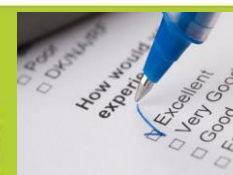
## Farecard / ticketing data



## P2P data



## Surveys (GHS,HITS)



## Mobile data



With MBD, transport planning is able to have a more holistic view of the transport network and commuter flows, allowing for optimization of the transport network as a whole as opposed to PT only.

## ISSUES AND BARRIERS OF MBD ACQUISITION AND ANALYSING



### Data Privacy

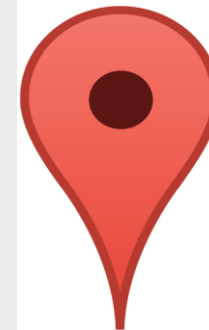


- Personal Data Protection Act (PDPA)
- Regulate and prevent misuse of individuals' data
- 3 key concepts : Consent, Purpose and Reasonableness



### Data Integration

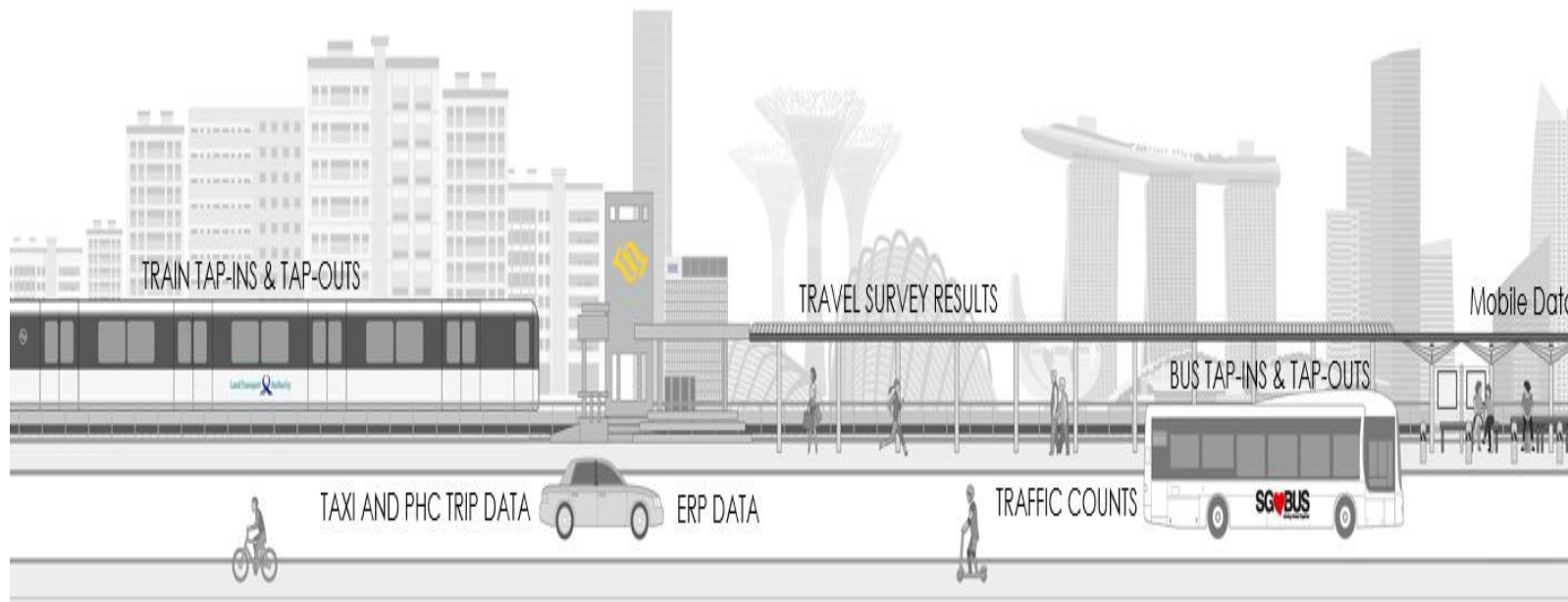
- Coordination between the telcos and public agencies
- Cleaning, anonymising, aggregating data for analysis



### Data Accuracy

- Spatial resolution of data
- Accuracy vs Precision spectrum

## FUTURE PLAN AND EXPECTATION OF MBD



- Real time analysis
  - Improving commuter flows
  - Identifying network chokepoints
  - Alleviate congestion
- More precise OD studies
  - Determination of home-work
  - Mode , purpose
  - FMLM connectivity
- Variations in travel times
  - Public and private transport network

The advent of MBD gives us planners a wide coverage of data, large sample size and it allows us to save costs by reducing the need to carry out more conventional information gathering. Moving forward, harnessing the potential of MBD, is paramount to ensure a sustainable and people-centric transport system.





THANK YOU