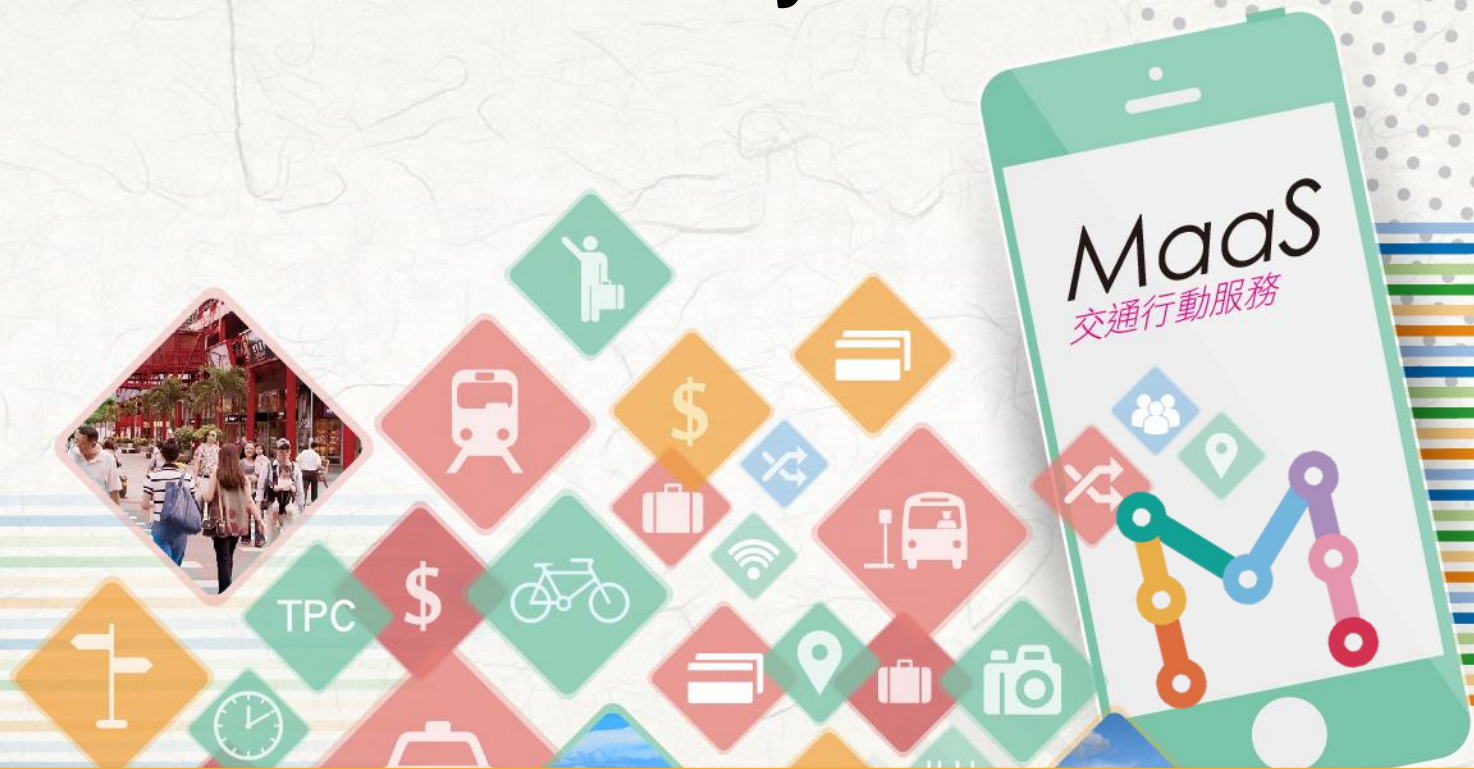# Will MaaS Solve the Congestion Problem on Freeway No.5

Dr Muhan Wang
ITS Program Deployment Office
2/10/2017

Outline

1. **Current Situation and Issues of Transportation in Taiwan**
2. **MaaS Service Concepts**
3. **MaaS in Taiwan**
4. **MaaS APP Services**
5. **Vision & Prospection**

1. Current Situation and Issues of Transportation in Taiwan
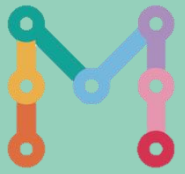
Taipei **population density**

9,897 **Person/sq.km.**

Public transport market share 42.8%

Yilan **population density**

213 **Person/sq.km.**

Public transport market share 10.3%

Public Transport is the key

⚠️ Lack of integration and seamless connection between public transport services.

People own vehicles, but 95% of the time of their car are in the parking lot.

Kaohsiung **population density**
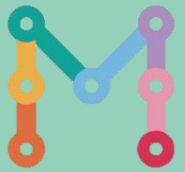
942 **Person/sq.km.**

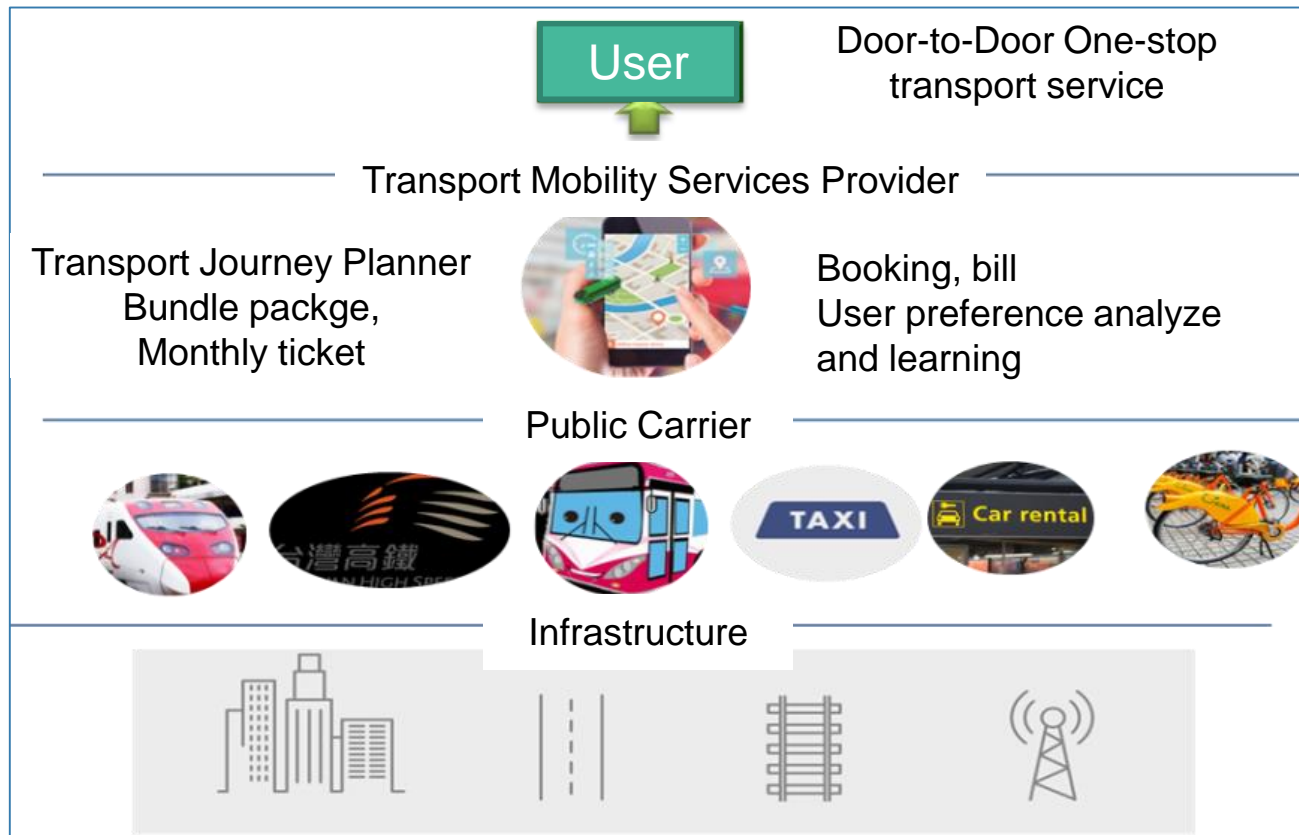**Public transport market share 9.3%**
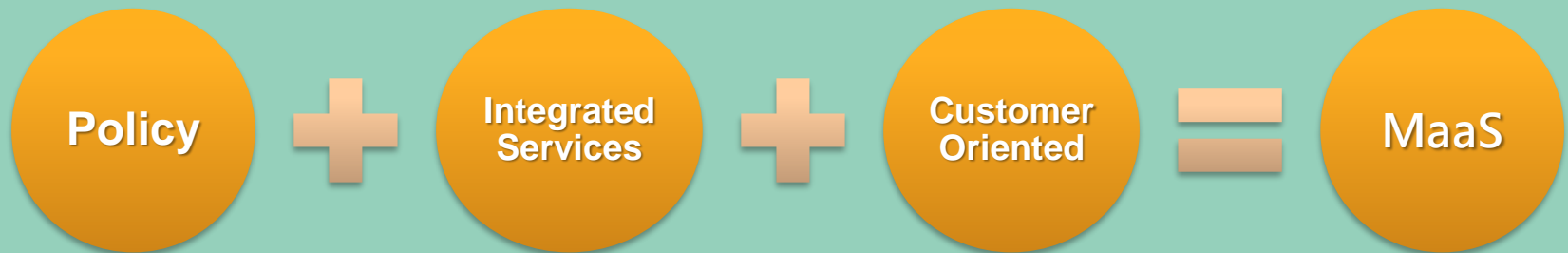
33.6
(unit/hundred person)

91.8
(unit/hundred person)

3

02 MaaS Service Concepts

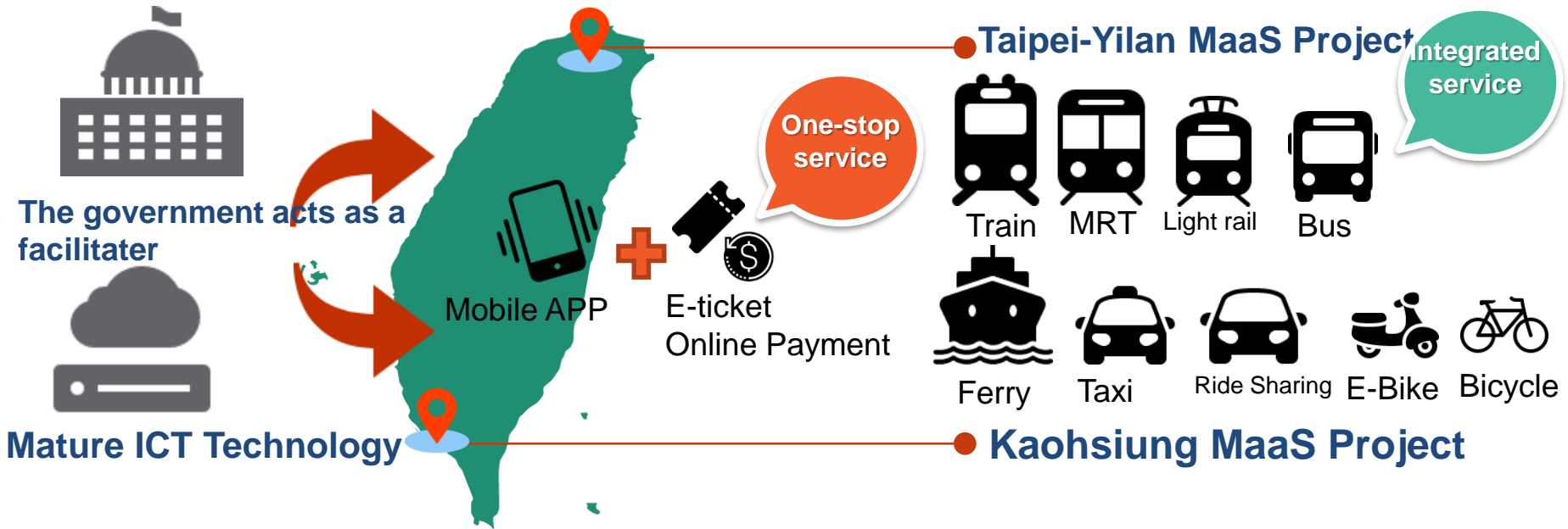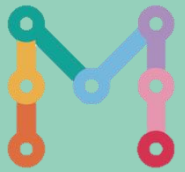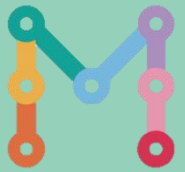1. MaaS：Utilize ICT & AI technologies to resolve the long term arguments between a wise choice for personal mobility and a better choice for living environment.

User

Door-to-Door One-stop transport service

Transport Mobility Services Provider

Transport Journey Planner
Bundle packge,
Monthly ticket

Booking, bill
User preference analyze
and learning

Public Carrier

TAXI   Car rental

Infrastructure

03 MaaS in Taiwan

The government acts as a facilitater

Mature ICT Technology

Mobile APP

E-ticket
Online Payment

One-stop service

Taipei-Yilan MaaS Project

Integrated service

Train MRT Light rail Bus

Ferry Taxi Ride Sharing E-Bike Bicycle

Kaohsiung MaaS Project

Policy + **Integrated Services** + **Customer Oriented** = **MaaS**
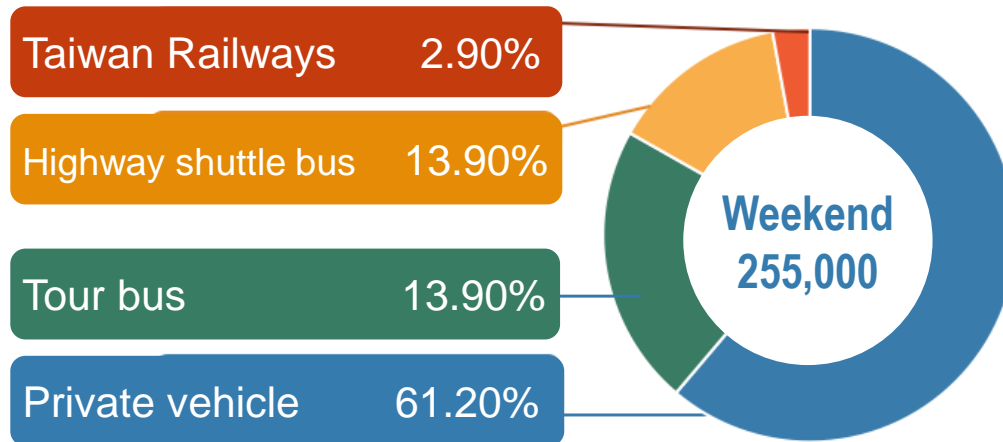
1. The northern MaaS program implementation area includes Taipei City, New Taipei City and Yilan County.

2. The number of trips is 160,000 on the weekday and **255,000 on the weekend and holidays**.

Private vehicle use accounts for **61.2%** 。

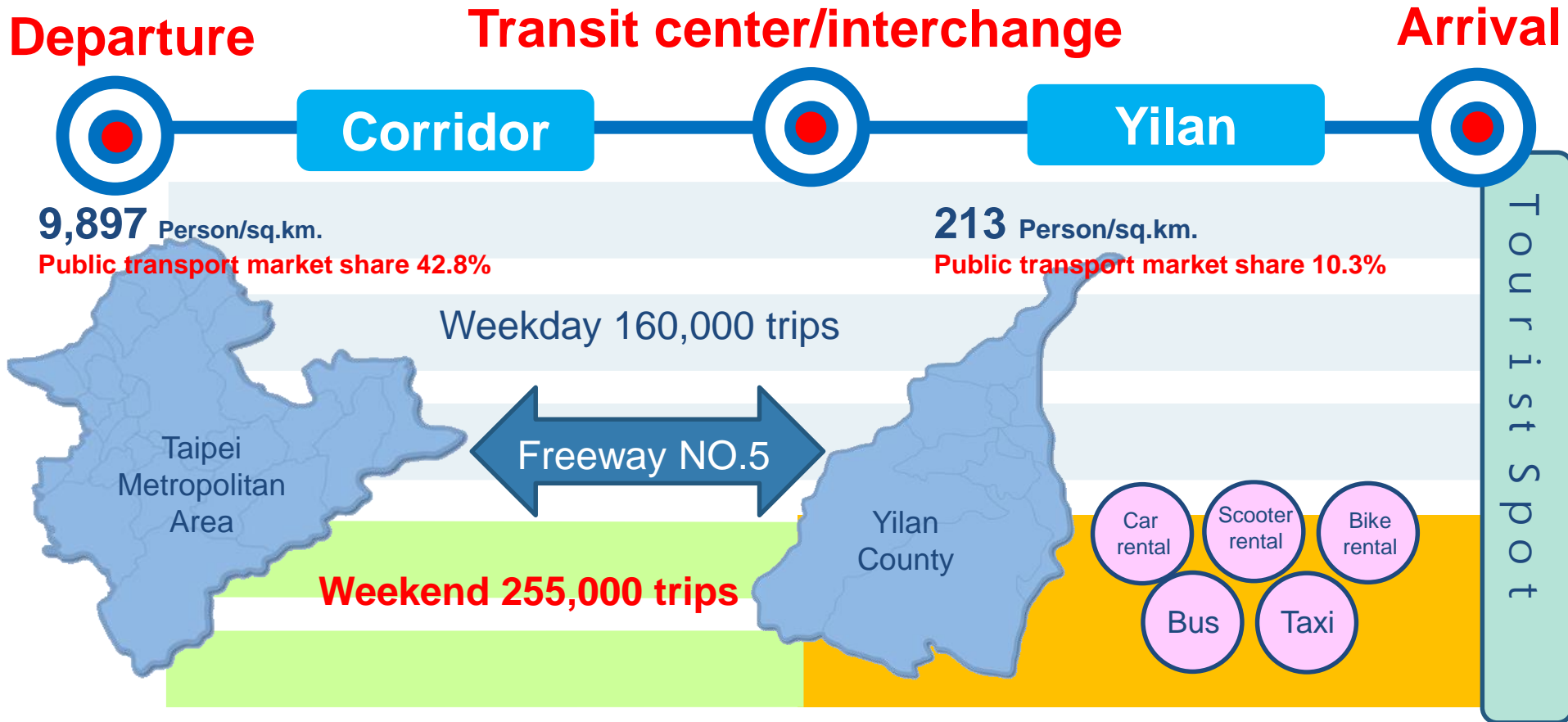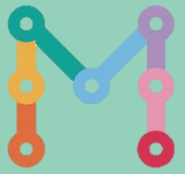|	
Taiwan Railways	2.90%
Highway shuttle bus	13.90%
Tour bus	13.90%
Private vehicle	61.20%

Weekend 255,000

3. High dement and high percentage of private vehicle usage causes serious recurrent congestion needed to be solved.

▲National Center for Traditional Arts

3.1 Implementation Area

Departure　　**Transit center/interchange**　　**Arrival**

Corridor　　**Yilan**

9,897 Person/sq.km.
Public transport market share 42.8%

213 Person/sq.km.
Public transport market share 10.3%

Weekday 160,000 trips

Taipei Metropolitan Area

Freeway NO.5

Yilan County

Weekend 255,000 trips

Car rental　Scooter rental　Bike rental

Bus　Taxi

Tourist Spot

1. Severe congestion on Freeway No.5 during weekend and holidays.

2. Low willingness to use Provincial Highway No.2 and No.9 due to long driving time
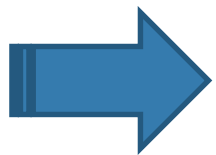
3.2 Problem and Solution
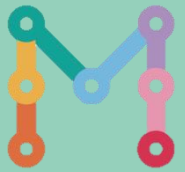
◆ Problems

- **High tourist attraction** during weekend and holidays
- Severe congestion on Freeway No.5
- **Roadway expansion is not likely a feasible option**
- Local public transit need to be improved

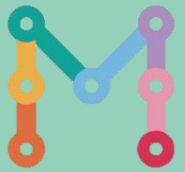◆ Solution- Provide incentivizes to trigger behavior change

- Incentives for Cars
  - Travel time prediction
  - Provide optimized departure time and routes
  - Give incentives to the followers
- Incentives for MaaS Users
  - Create a better local connected transportation service
  - Provide an attractive customer oriented service environment
  - Give incentives to the behavior changers
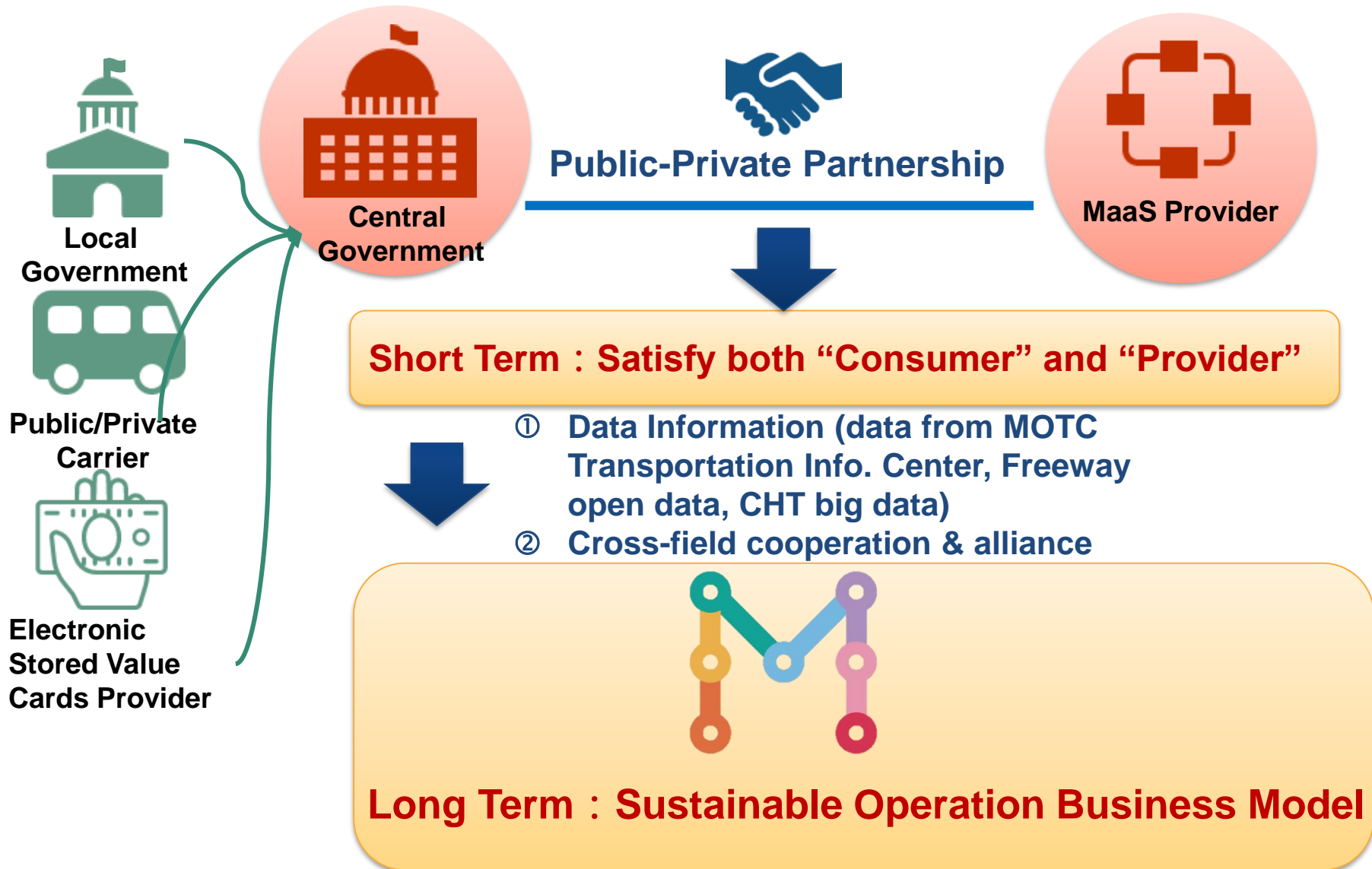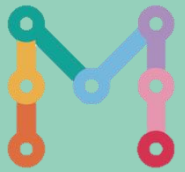
➡ Taipei-Yilan MaaS Service

3.3 Potential Benefits

Expected External Benefits

KPI

- **Changing travel behavior**
- **Integrated modes of transportation**
- **No. of horizontal alliances**
- **Financial benefit**
- **Satisfaction Indicator**
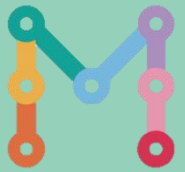- **Service level indicator**
- **Economic benefit**

- **Reduction in gas use**
- **Reduction in travel time**
- **Reduction in the number of accidents**
- **Encouraging new ways of doing business**

03 MaaS solution in Taiwan

Local Government

Public/Private Carrier

Electronic Stored Value Cards Provider

Central Government

Public-Private Partnership

MaaS Provider

Short Term：Satisfy both "Consumer" and "Provider"

① **Data Information (data from MOTC Transportation Info. Center, Freeway open data, CHT big data)**

② **Cross-field cooperation & alliance**

Long Term：Sustainable Operation Business Model

04 MaaS APP Functions

"Manage and master traffic related services via a digital interface (e.g. App), which meets the needs of each consumer on mobility"

Journey Planner

- ☐ Where To Go
- ☐ Trip Planner (Origin-Destination)
- ☐ POI info

EC Platform

- ☐ Transportation
- ☐ Accommodation
- ☐ Ticket & Coupon
- ☐ Promotion

Reservation

- ☐ Ride Sharing Reservation
- ☐ Chartered Vehicle Reservation

Member

- ☐ Profile / Billing settings
- ☐ My Order
- ☐ Quest / Bonus
- ☐ My Coupon
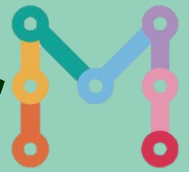
Personal Secretary

- ☐ My Journey (Including reminder)
- ☐ My Favorite Spots
- ☐ Share to Community

Home

- ☐ Ad Banner
- ☐ Function list/ Search bar
- ☐ Customer Support
- ☐ Wish list

04 MaaS APP – Journey Planner

Seamless Mobility Service

Value-added Services

First Mile	Taipei-Yilan Corridor	Last Mile	Attractions
MRT/Bus	Highway shuttle bus	Local Bus	Restaurant & Cuisine
Taxi	Train	Taiwan Trip Bus	Scenic Spots
Chartered Vehicle	Chartered Vehicle	Chartered Vehicle	Gift & Souvenir
Ride Sharing	Ride Sharing	Taxi	Accommodation
	Alternative time or route choice	Shared	Parking Reservation
		Car Rental	

04 MaaS APP Features
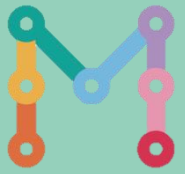
1 ▶ Powerful engine for journey planning

2 ▶ User preference learning and analysis

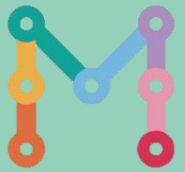**3** ▶ Demand-responsive Personal Secretary

4 ▶ Provide incentives to members who making better choices

5 ▶ Provide a powerful user oriented EC platform

04 MaaS APP Main Keys

Journey Planner

Transfer planner

Offer the most optimal route

Event Notification

Dynamic Information Push Notification

Personal Secretary

Demand-responsive Personal Secretary

EC Platform

Item classification

Provide bundle services, including dining, accommodation, travel, shopping and transportation.
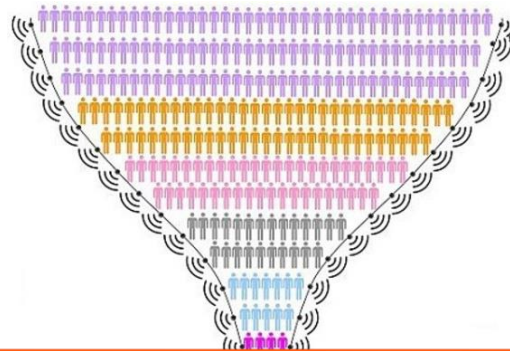
Shopping Cart

Aggregation of data from a variety of sources and logistics

Checkout

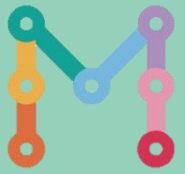Online checkout and billing

User Behaviour Learning Mechanism
User preference analysis and learning
Personalized travel advice

1. Integration of multiple public transportation
2. Green transportation options
3. Personalized transportation services

Vision：MaaS APP will be a friend you can trust. She knows you well, always stands behind you answer your request and provide you a good shopping experience.

1. Before: Planning and ordering services
2. During: Reminding information related with dining, accommodation, travel, shopping and transportation
3. After: Experience sharing

Changing the ways of thinking and choosing makes our life better

Thank you for your attention