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Bus System Reformation

In Seoul

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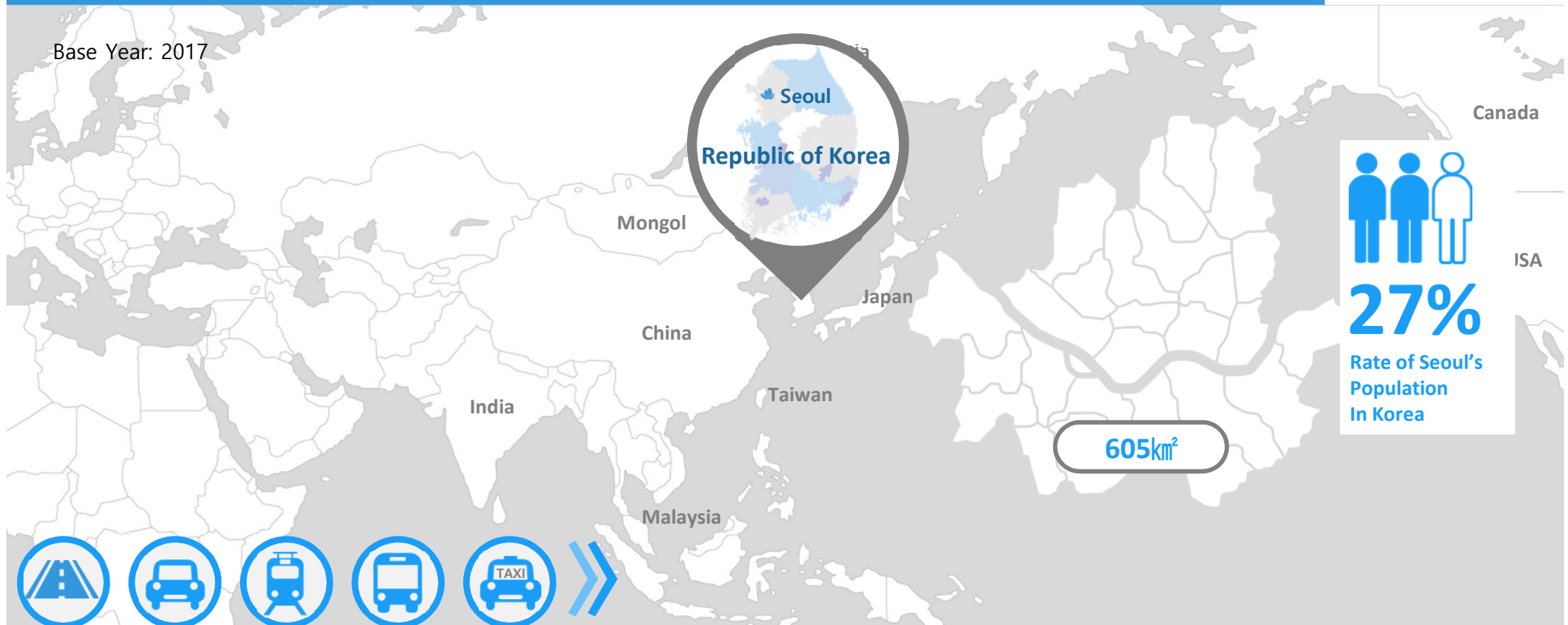
Seoul Transport Infra

Advanced Public Transportation System
Focused on Seoul's BMS/BIS



Introduction

Base Year: 2017



8,240km



3.1mil.

(Capital region 4.7mil)



356.6km

(10 lines)



8,969

(595 route)



71,892



Seoul Transport Infra

Advanced Public Transportation System
In Seoul



Introduction

Current Status of Subways

Base year: 2017

Seoul Metro 356.6km (Line 1~9, Ui-Sinseol LRT)

Regional Rail in Seoul 121.7km

478.3km



10 lines



800 million users a day

Free WiFi



Screen Door



1st Line Open: 1974



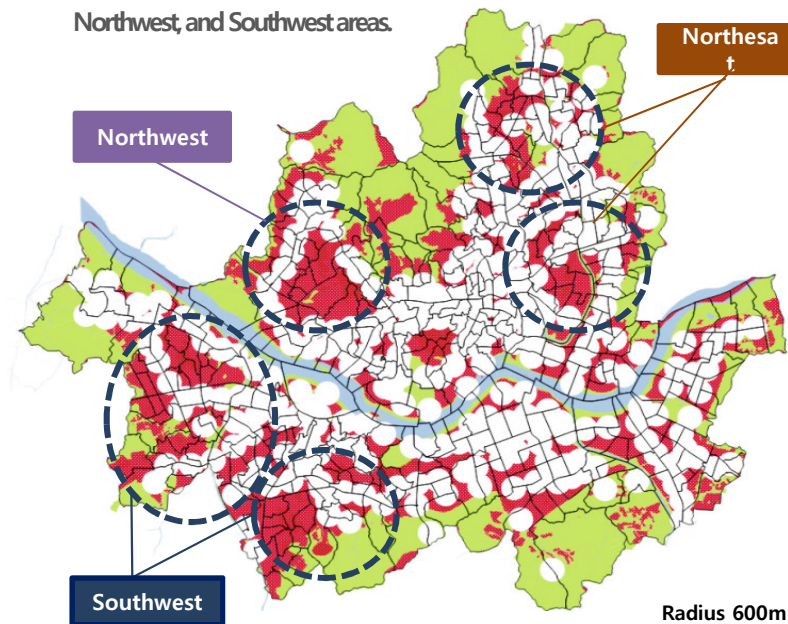
— Seoul Metro
— Regional Rail



Service Coverage

63%

- Railway service isolated area are currently 38%
- Isolated areas are distributed especially in Northeast, Northwest, and Southwest areas.

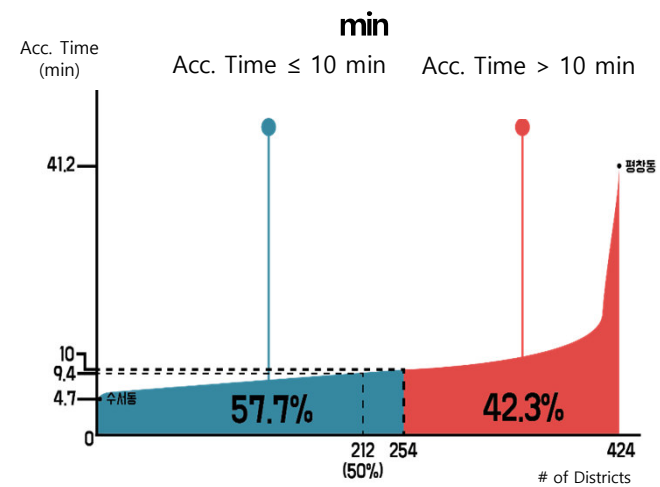


Access Time

Access time > 10min

42.3%

Average Access Time = 10.1





Current Status of Bus

Base year: 2017

- 352 routes/7,405 inner city buses/6,240 stops
(65 companies)



Number of bus routes

35
2



Users/day

4.28 million



Number of buses

7,405

- 243 routes / 1,564 Local buses (135 companies)

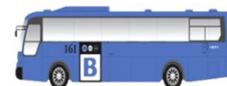


Link trunk line buses or subways for easy transfer
(Covers areas unserved by Feeder Lines)



Inter-regional Lines
(10 routes / 245 buses)

(sub)Urban areas ↔ (sub)Center cities
Meet the demand of private car.



Trunk Lines
(123 routes / 3,665 buses)

Connecting suburban areas and center cities
Punctuality and speediness.



Feeder Lines
(207 routes / 3,411 buses)

Link trunk line buses or subways for easy transfer
Satisfy the local needs and securing accessibility.



Circular Lines
(3 routes / 14 buses)

Circular bus service for business and
shopping in urban areas.



Night Lines
(9 routes / 70 buses)

Operating at late night (1 am ~ 4 am)

All Eco-friendly
(CNG or Electronic)



Low-floor
(35% of All city buses)



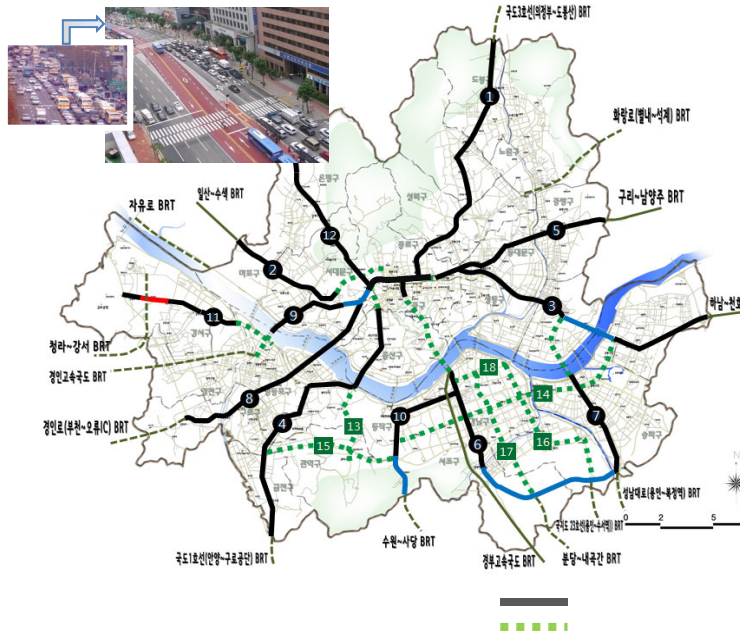


Exclusive Median Bus Lane (BRT)

Base year: 2017

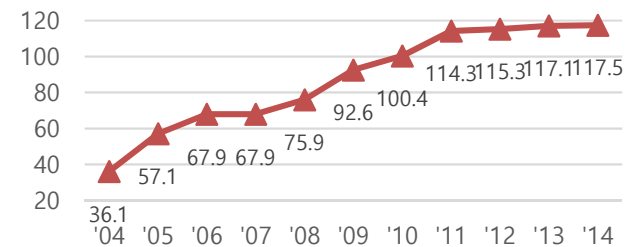
- 12 axis points, 121.1km
- No. of Seoul BRT routes : 282

Exclusive Median Bus Lane



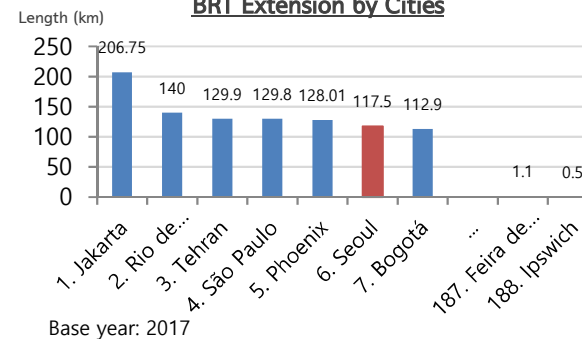
Since the bus system was formed in 2004,
the exclusive median bus lane has been continuously expanding
→ Secured extension line and the World's 6th longest

Trends in extending exclusive median bus lane in Seoul (annually)



source: Seoul Statistics, Traffic Improvement Division, SMG (2015)

BRT Extension by Cities





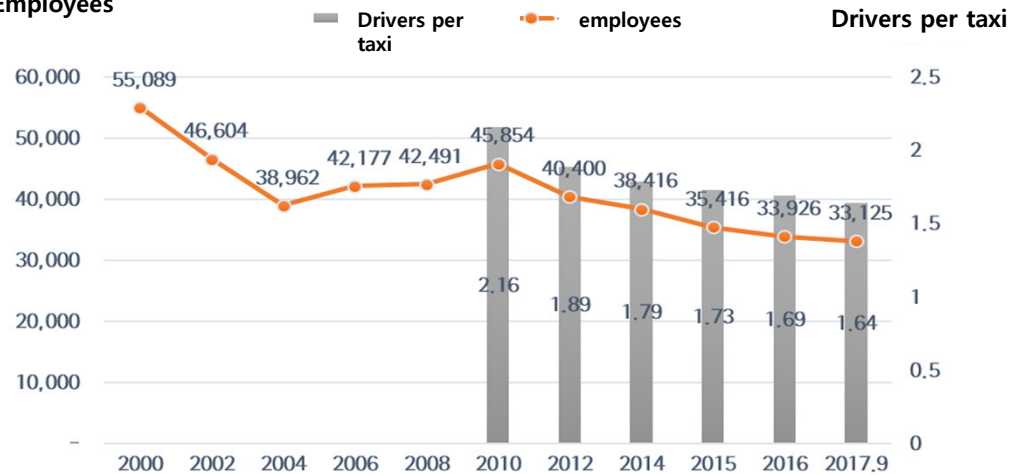
Current Status of Taxi

Base year: 2017

- 71,892 Taxis, 255 Taxi Companies

	Total	Company Taxi	Private Taxi
# of Permits	71,892	22,643	49,249
# of Registered Taxi	69,625	20,474	47,196

Employees



Company taxi



Private taxi



Luxury taxi



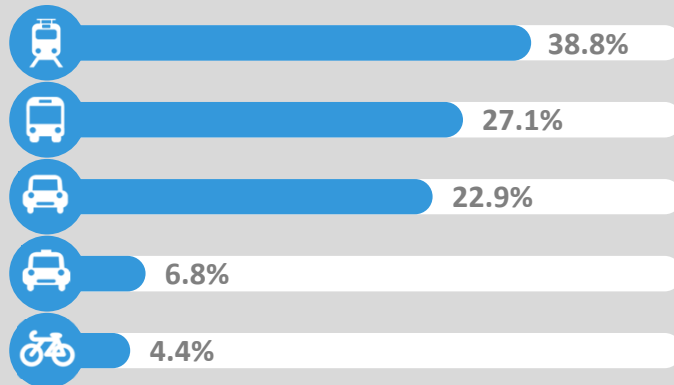
App. taxi

Modal Share

Advanced Public Transportation System
Focused on Seoul's BMS/BIS



Introduction

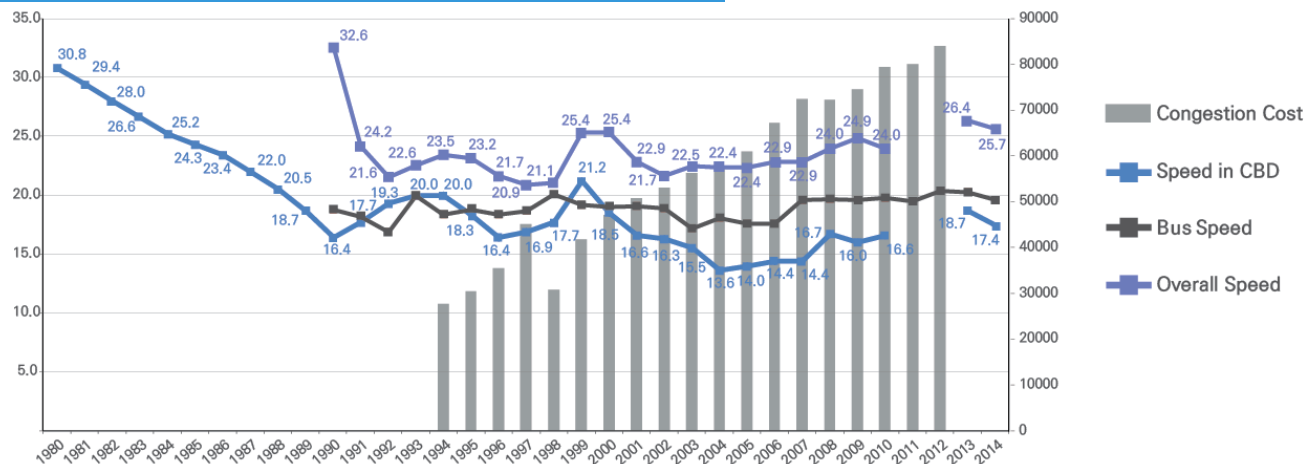


Transit Share rate

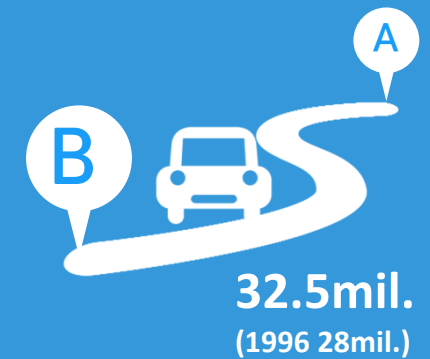
65.9%



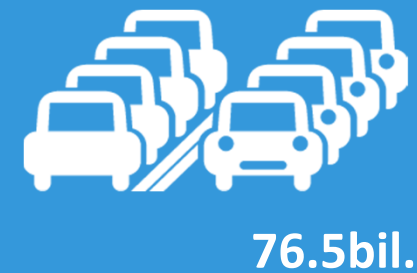
Shift in Travel Speed & Traffic Congestion Cost

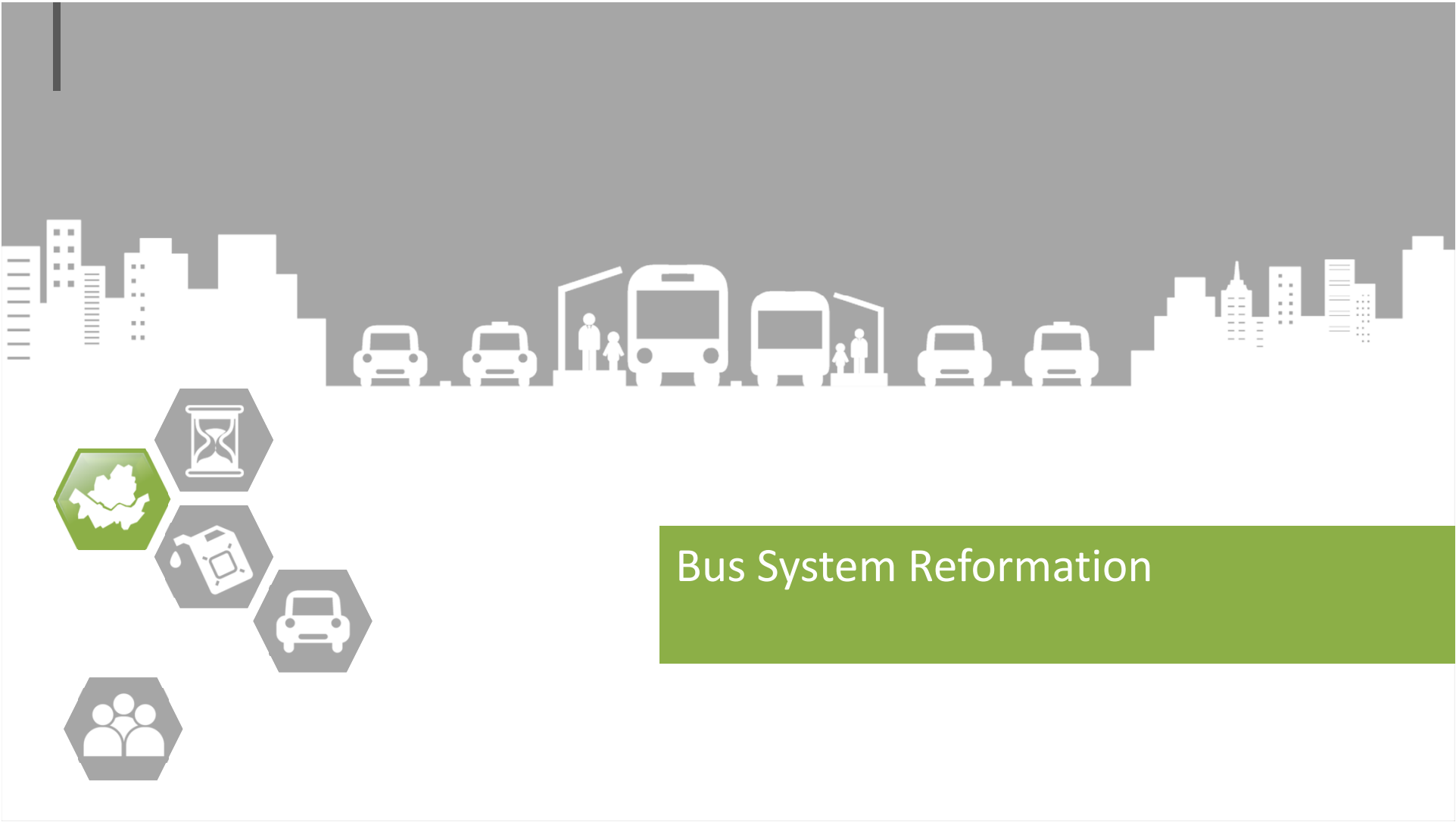


Trips per day



Congestion Cost

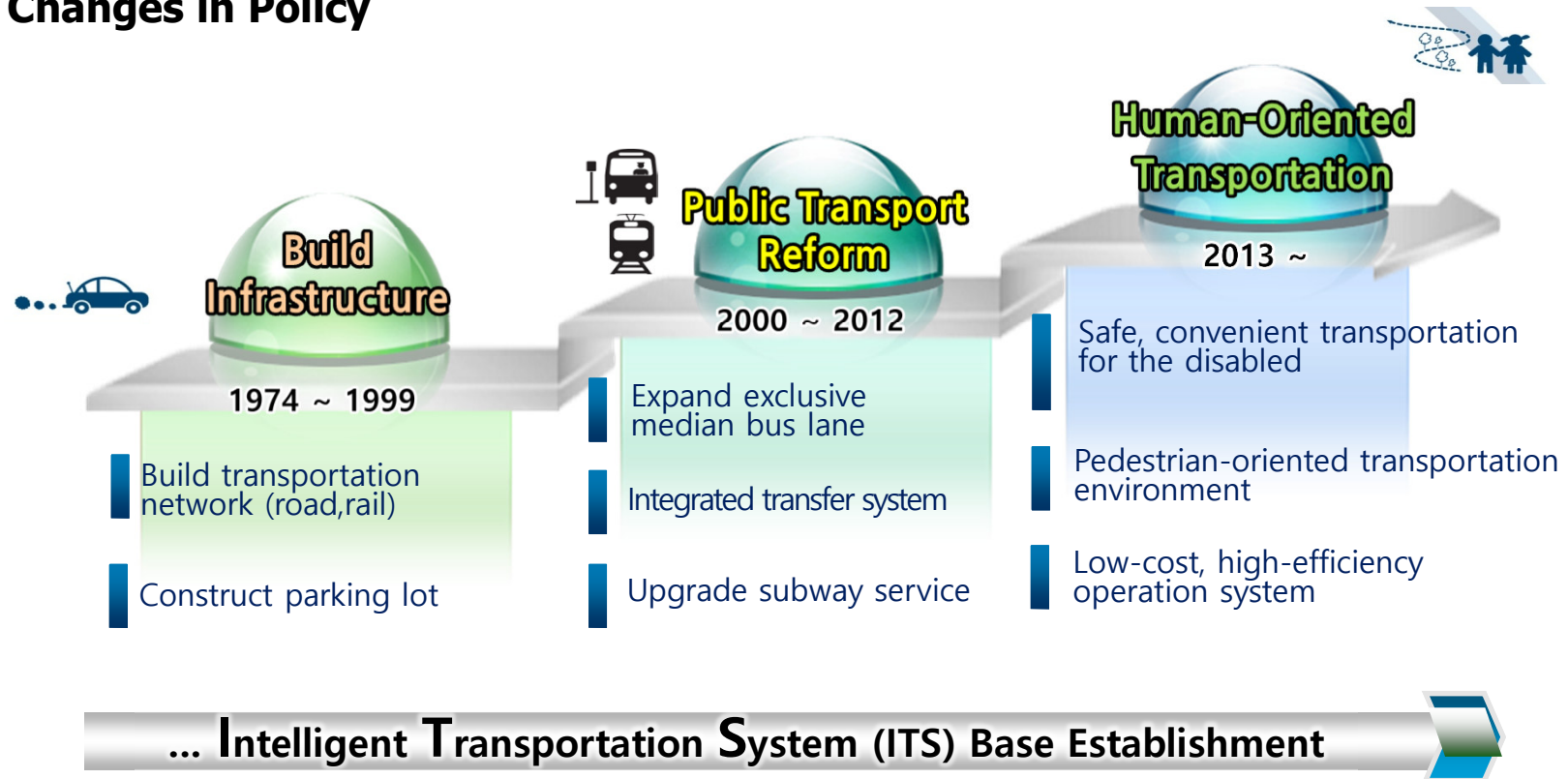




Bus System Reformation



Changes in Policy



Background

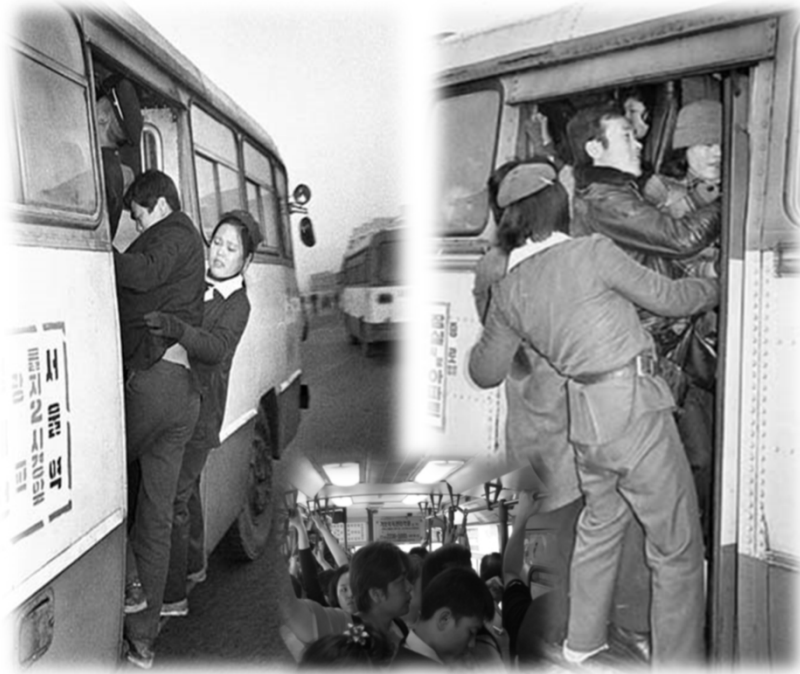
Advanced Public Transportation System
In Seoul



Public Transport
Reform

Poor Bus Services

70's



80~90's



Background

Advanced Public Transportation System
In Seoul



Public Transport
Reform

Limitations

Supply ↓ Demand ↑

- Urban & Sub-urban development
- Increasing of Traffic Demand
- Traffic Congestion Cost Increase

Road Construction

- Developed Area
- High Construction Cost (\$50~80million / km)

Subway Construction

- Long Construction Time (10~20years)
- High Construction Cost (\$100~110million / km)



Problems

Bus Route

Complicated, Centralized
in Particular Lines

Company

Small Size, Low Willingness
to Invest

Operation

Slow, Not on time

Drivers & Passenger

- Poor Welfare, Unfriendly
- Uncomfortable



What should we do

Public Transportation
Reform



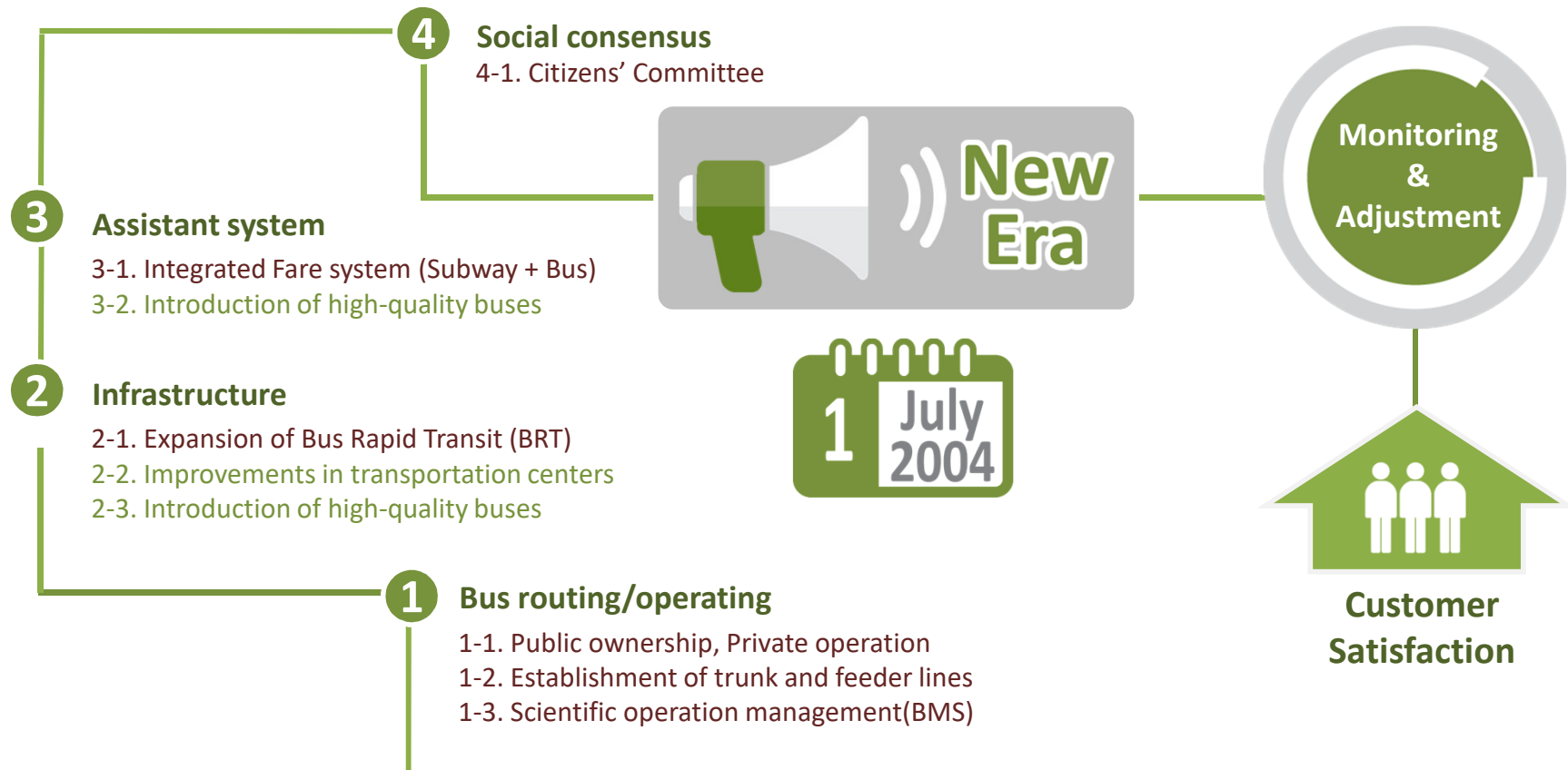
Not a Choice But a Must

Strategies & Action Plan

Advanced Public Transportation System
In Seoul



Public Transport
Reform



Introduction of Semi-Public Transport System

Advanced Public Transportation System
In Seoul



Public Transport
Reform

Before

- Private Bus Company owns routes
- Revenue Management by Each Company

Government
(SMC)

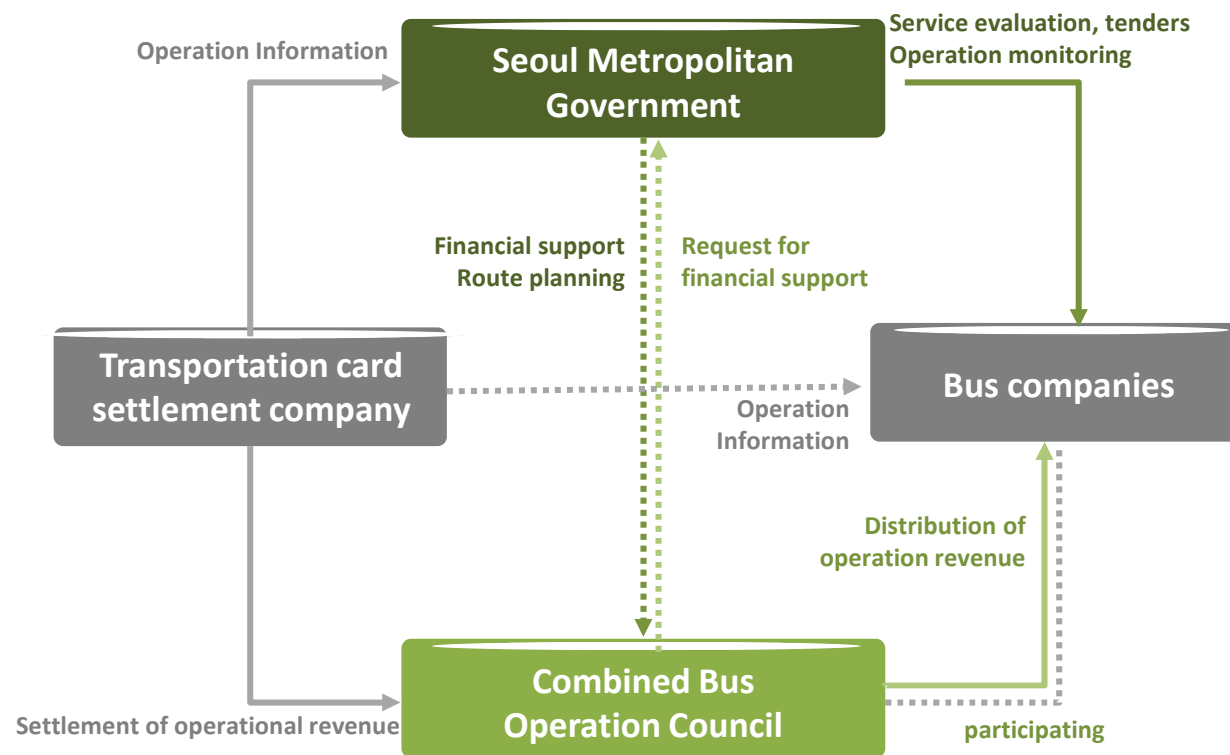


- 1) Management of Bus routes
- 2) Infrastructure Construction
- 3) Management of Revenue Pool



Bus Company

- 1) Operation and maintenance
- 2) Labor management



Introduction of Semi-Public Transport System

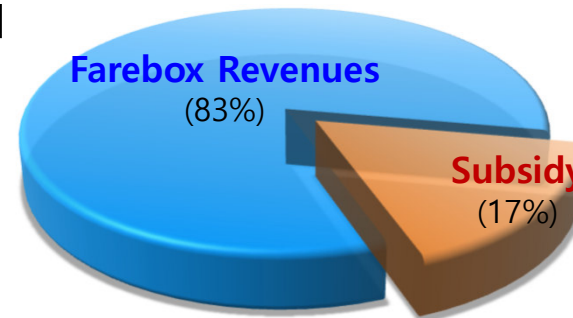
Advanced Public Transportation System
In Seoul



Public Transport
Reform

● Composition of Revenue Pool

- TOTAL : \$ 15 Billion



● Distribution of revenue pool



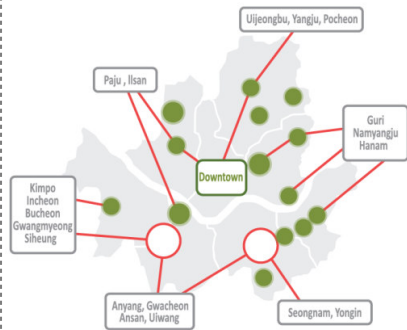
Reorganization of Bus routes

Advanced Public Transportation System
In Seoul



Public Transport
Reform

(Sub)Urban areas ↔ Center cities
Meet the demand of passenger car



Inter-regional Lines



Connecting suburban areas and center cities
Meet the demand of passenger car



Trunk Lines



Link trunk line buses or subways for easy transfer
Satisfy the local needs and secure accessibility



Feeder Lines



Circular bus service for business
in urban areas



Circular Lines



Reorganization of Bus routes

Advanced Public Transportation System
In Seoul



Public Transport
Reform

A New Bus Numbering System



2 0 6
Blue Bus



4 1
Yellow Bus

1 2 1 2

Green Bus



7 0 1 2

Red Bus



Redesign Fare Structure

Advanced Public Transportation System
In Seoul










Public Transport
Reform

Integrated distance-based transit fare system

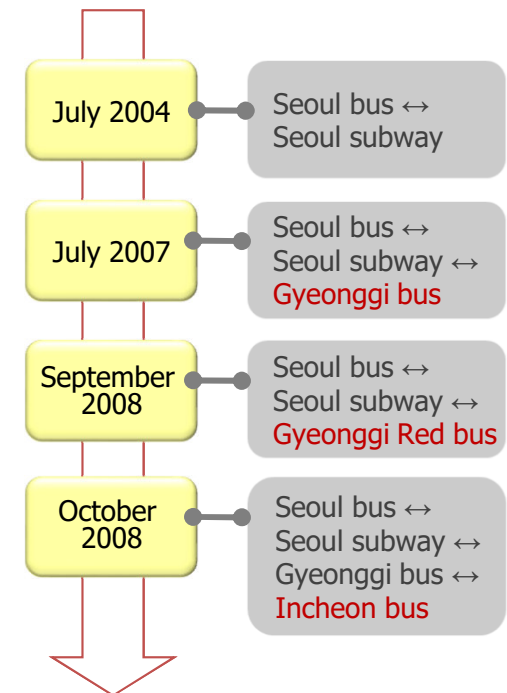
Free transfer between bus-bus and bus-subway (within 30 minutes, maximum 5 times)

<Fare Structure>

- Subway (single ride) : Basic Fare ₩1,250 for 10 Km
Additional Distance-based Fare ₩100 for each 5km up
- Bus (single ride) : Basic Fare ₩1,250(Trunk) / About ₩2,500 (Inter regional bus)

Method of fare calculation	bus	subway	Before reform	After reform
 	5km (by bus) + 4km (by bus)		1,250 1,250 = 2,500 won	1,250 won (Base fare within 10km)
 	5km (by bus) + 7km (by subway)		1,250 1,250 = 2,500 won	Base fare + 100 won (Additional fares for 5km up to 40km and for 10km beyond) 1,350 won
  	6km (by bus) + 8km (by subway) + 4km (by bus)		1,250 1,250 1,250 = 3,750 won	Base fare + 200 won (Additional fares for 10km to 20km) 1,450 won

✓ Expansion of the fare system



Redesign Fare Structure

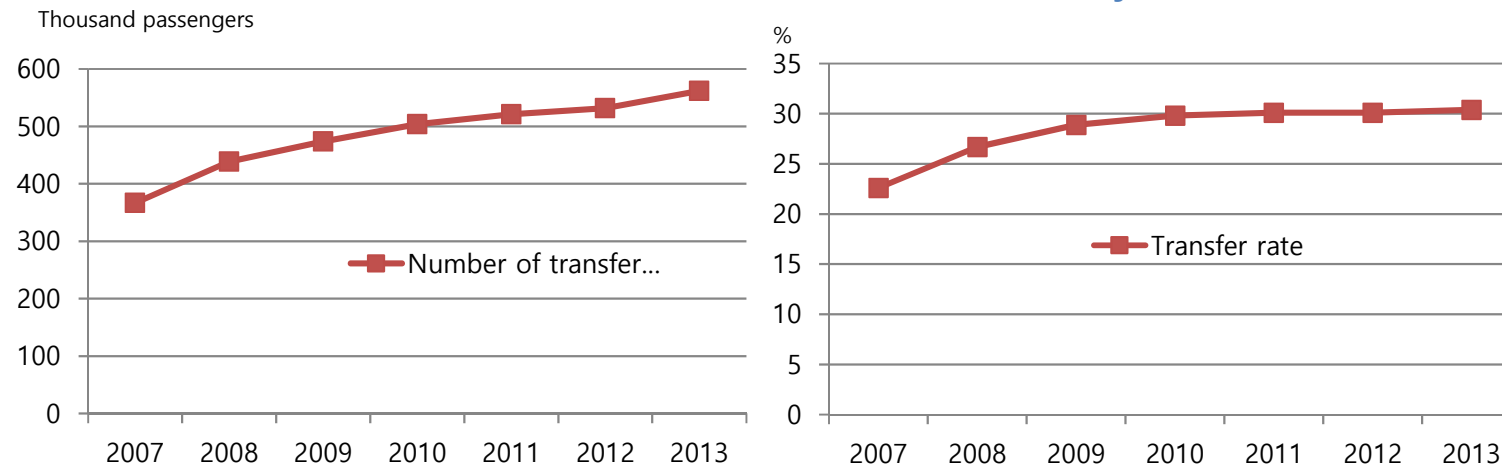
Advanced Public Transportation System
In Seoul



Public Transport
Reform

Effect of Integrated distance-based transit fare system

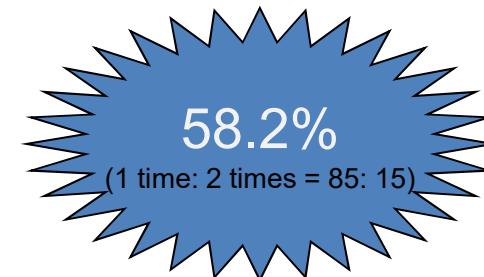
Transfer between bus and subway



Note: Data is only applied to subway 5,6,7 and 8 lines.

Rate of transfer from bus to other bus and/or subway

Source: Seoul Metropolitan Government (Oct. 2012)



Expansion of Bus Rapid Transit (BRT)

Advanced Public Transportation System
In Seoul



Public Transport
Reform



For faster, reliable & Punctual bus



35.5km

2004

121.1km

2017(Operated)

223.3km

Plan

12Corridors, 121.1km

Bus Speed

33%



2004

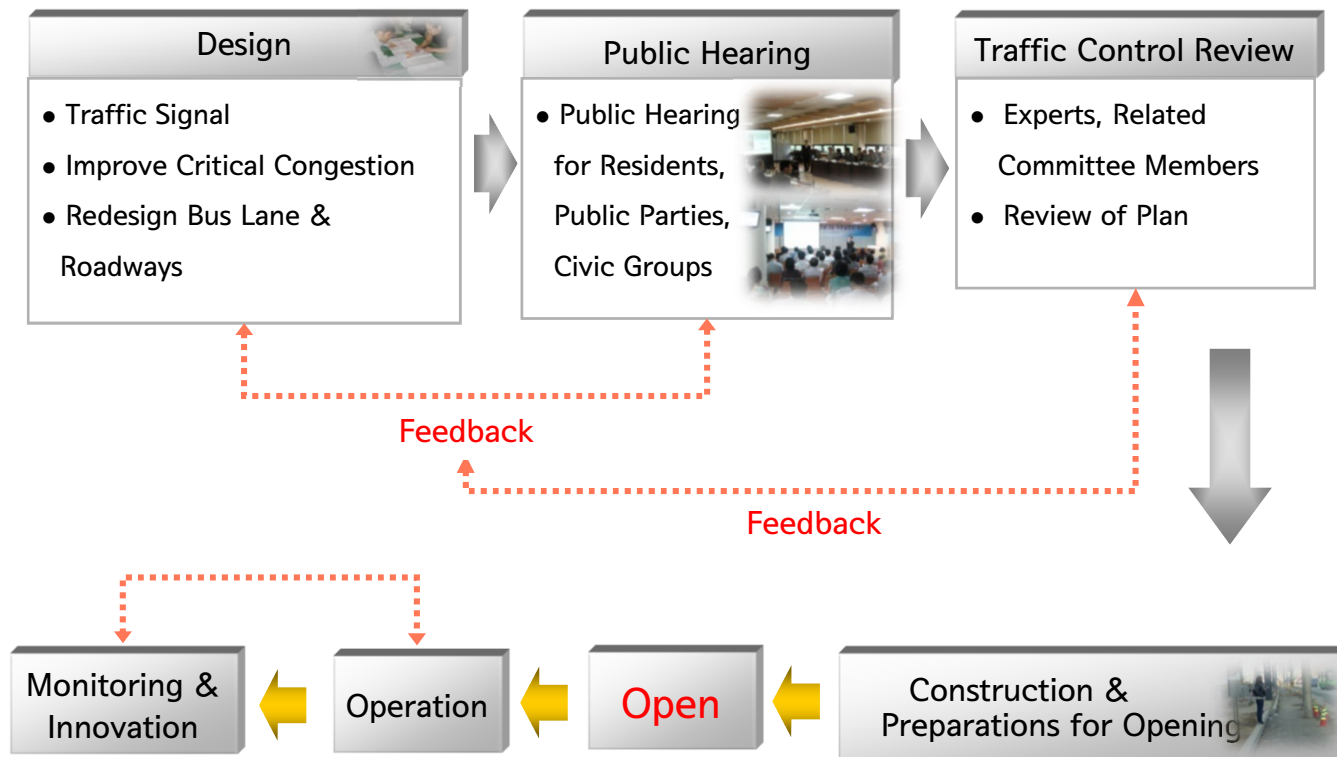
15km/h



2017

19km/h

● Decision making Process



Expansion of Bus Rapid Transit (BRT)

Advanced Public Transportation System
In Seoul



Public Transport
Reform

Shinbanpo



Jamsil



Expansion of Bus Rapid Transit (BRT)

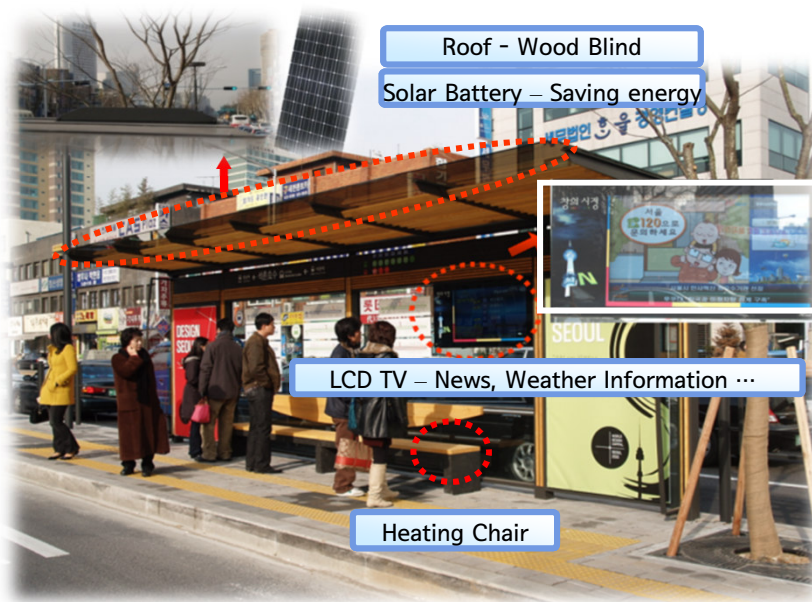
Advanced Public Transportation System
In Seoul



Public Transport
Reform

Stations

- Specified Bus Loading Area
- Various convenience facilities



Safety Signs

- Safety Signboard, Shock absorption tank etc.



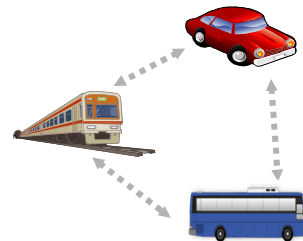
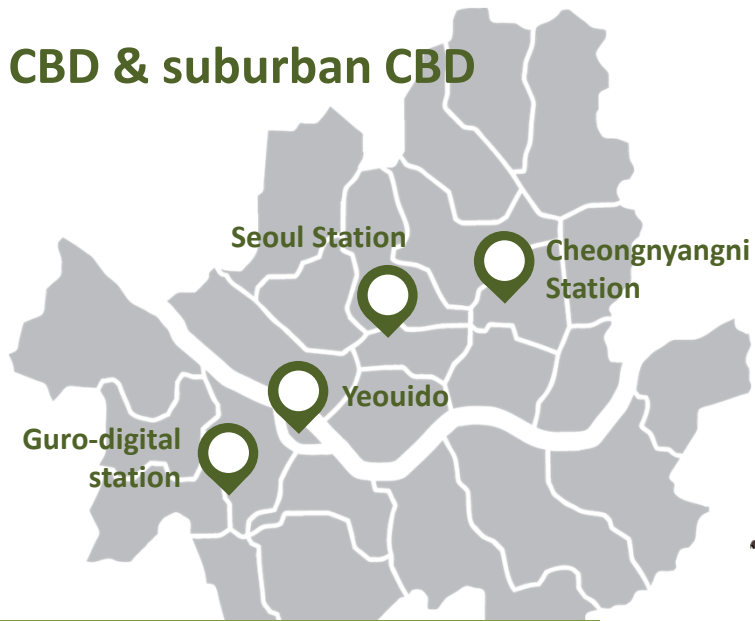
Implementation of Transfer Center

Advanced Public Transportation System
In Seoul



Public Transport
Reform

In CBD & suburban CBD



Seoul Transfer Center



80,000 person/day

Number of passengers for transfer

Modal, able to transfer



Train(KTX)



Bus



Taxi



Subway

Time for Transfer

12min → **3min**



Implementation of Transfer Center

Advanced Public Transportation System
In Seoul



Public Transport
Reform

Cheongnyangri



Average walking
distance
reduction
(300→50m)



Seoul Station



Better walking
accessibility
(12→3min)

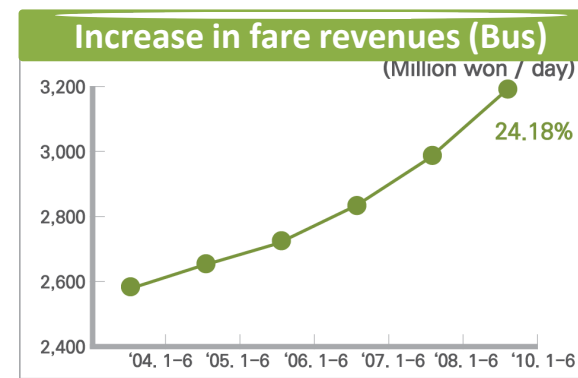
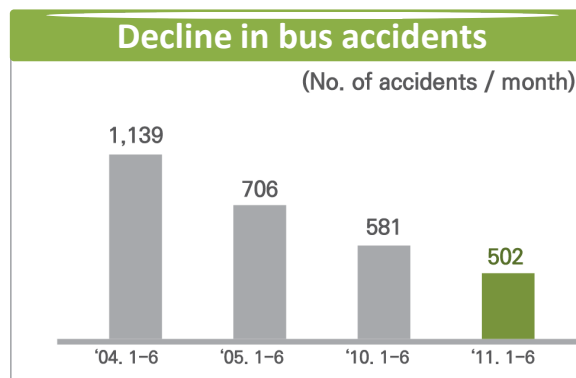
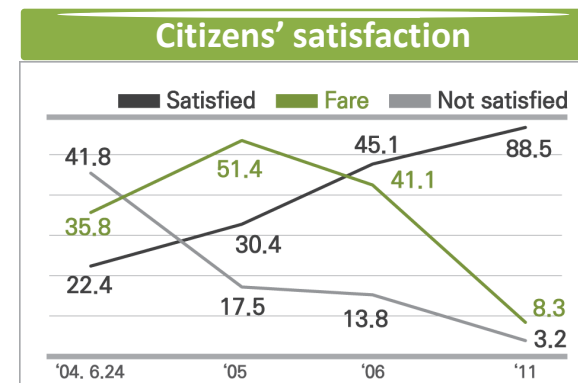
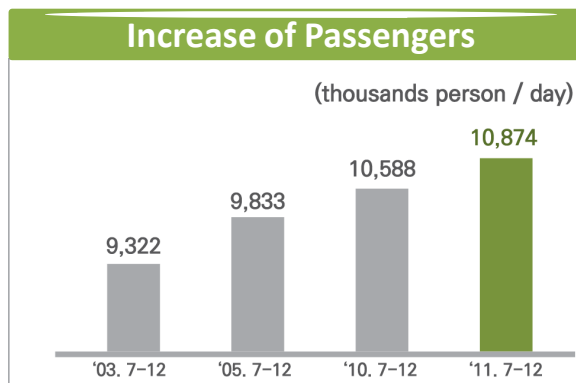


Major Achievement

Advanced Public Transportation System
In Seoul



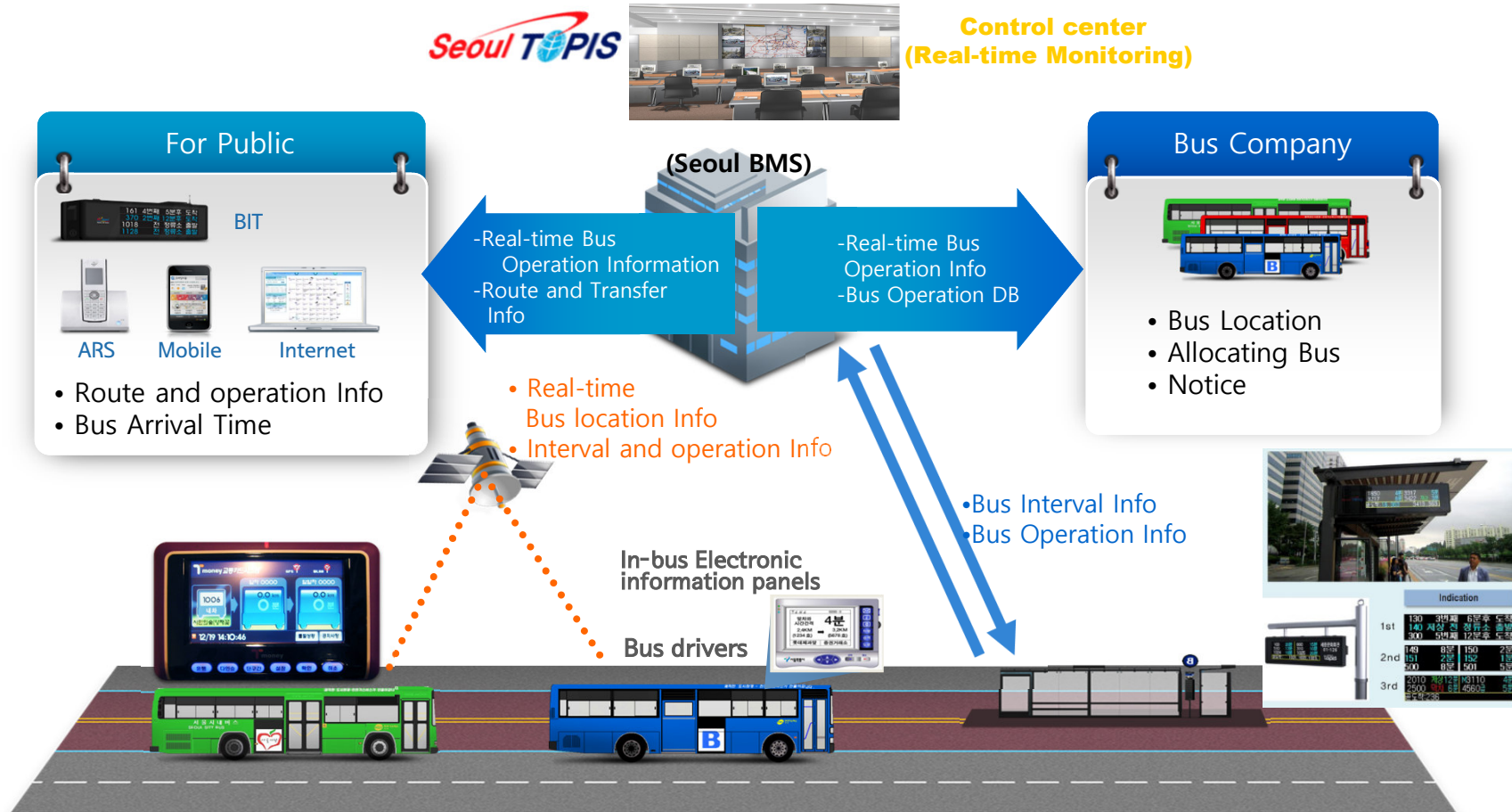
Social benefits expected : \$ 1.4 billion



System Architecture

Advanced Public Transportation System
In Seoul

Bus Management &
Information System



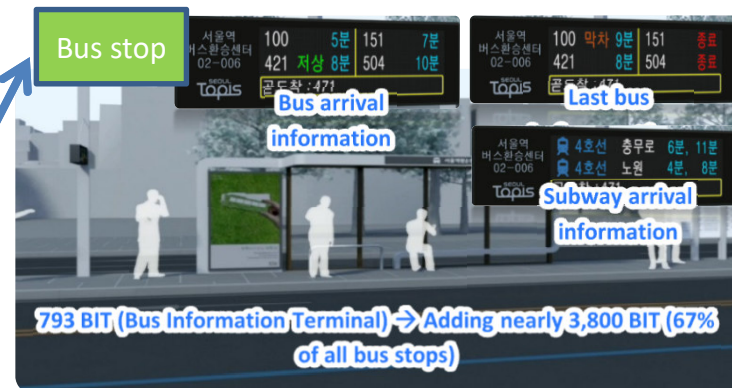
Bus Information Service

Advanced Public Transportation System
In Seoul

Bus Management &
Information System

Supply of accurate information

1. Real-time bus information Service (Accuracy 98%, Satisfaction 96%)



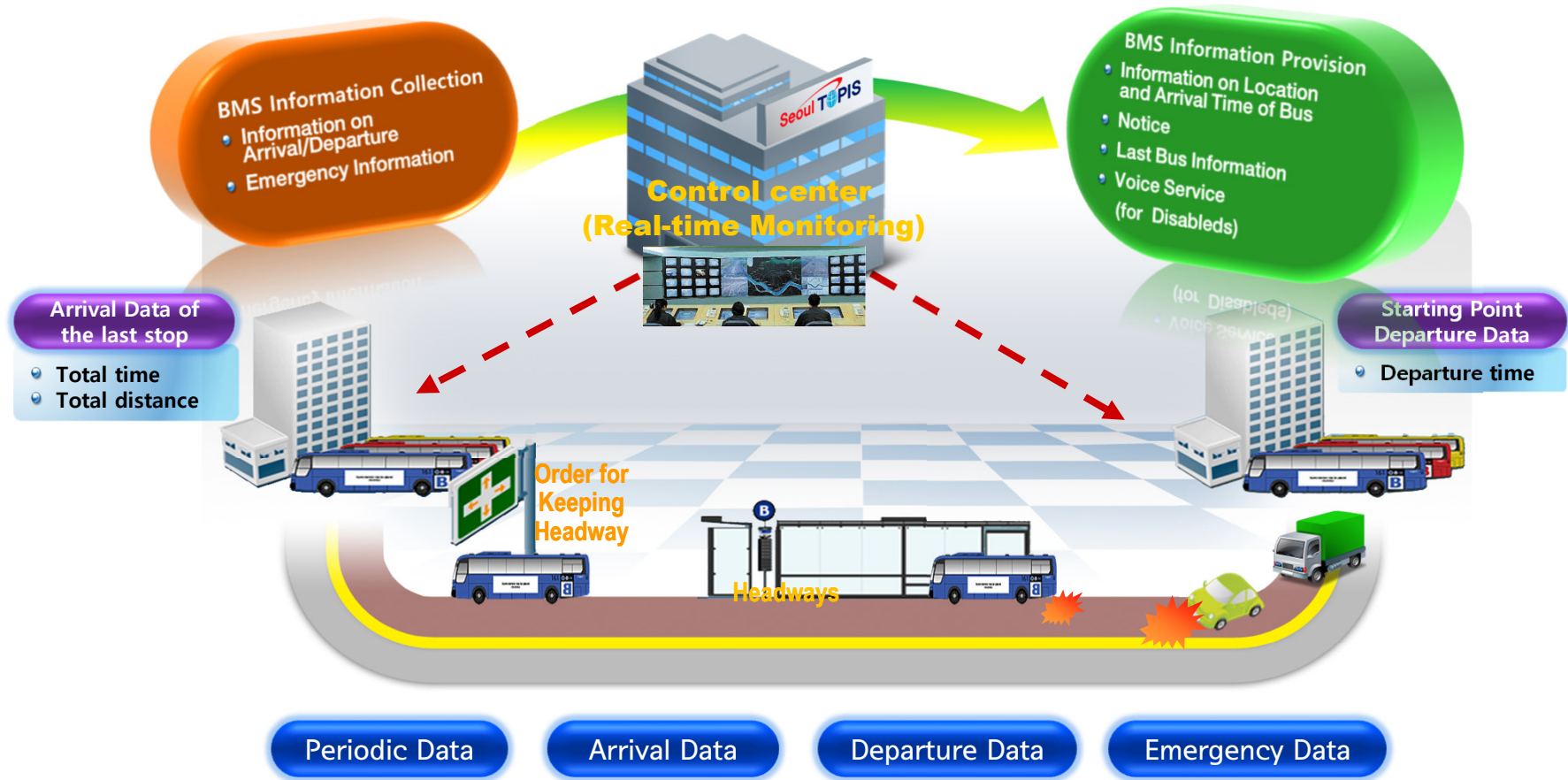
2. Provide integrated information of Bus and Subway



Bus Control & Monitoring

Advanced Public Transportation System
In Seoul

Bus Management &
Information System



Fare Collection

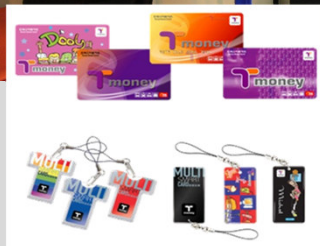
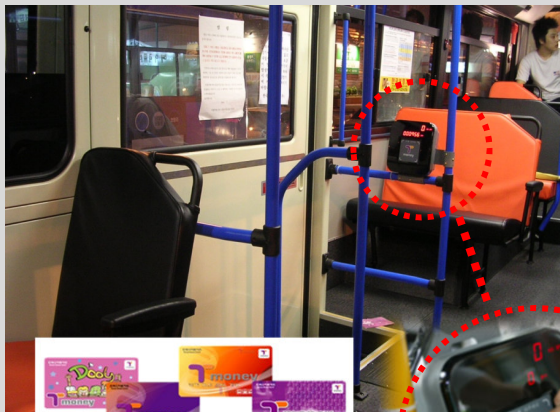
Advanced Public Transportation System
In Seoul

Bus Management &
Information System

New Fare System



One Card, All Pass



Train(KTX)



Express
Bus



Express way



money



Taxi

City Bus



Subway

Any Modal

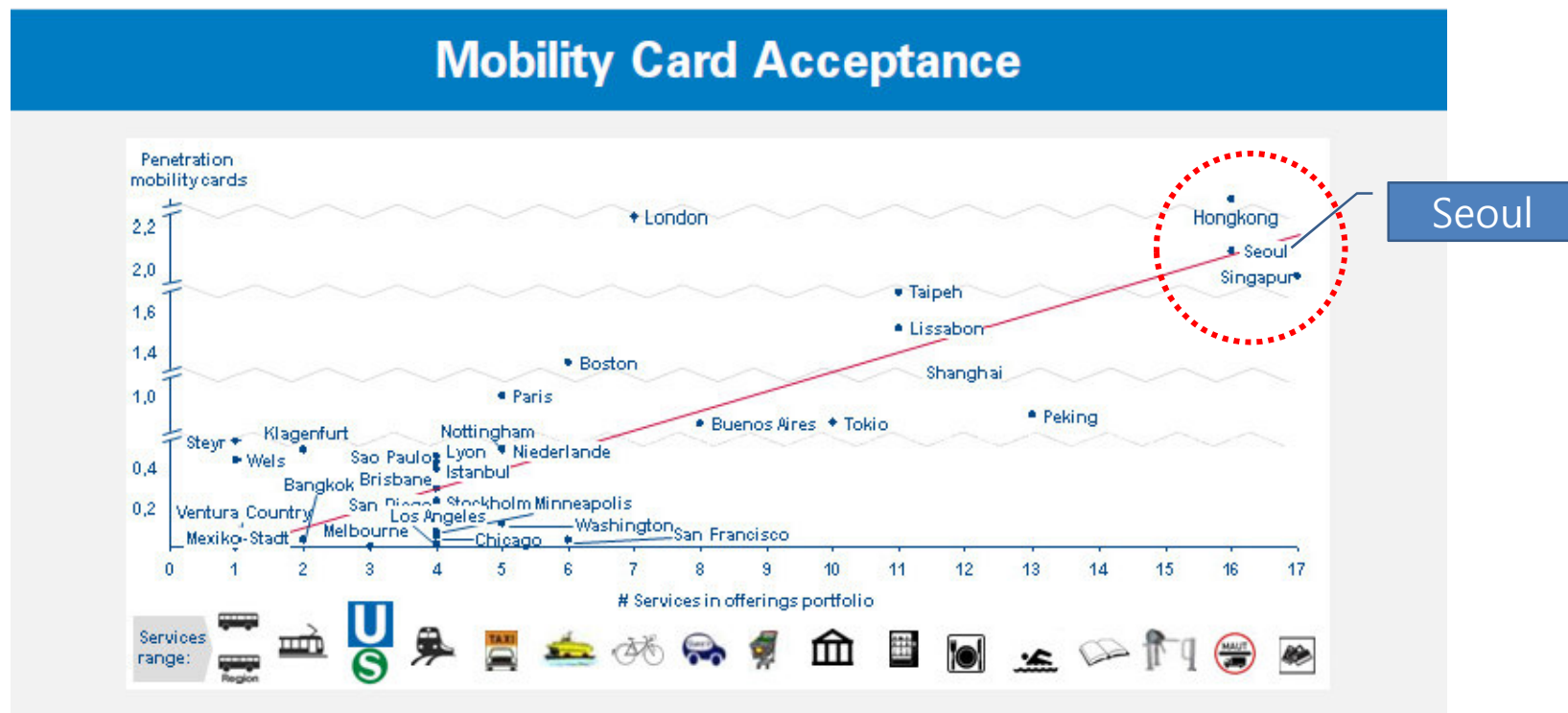


NFC + Mobile



Anywhere

Ranking of Card Usage

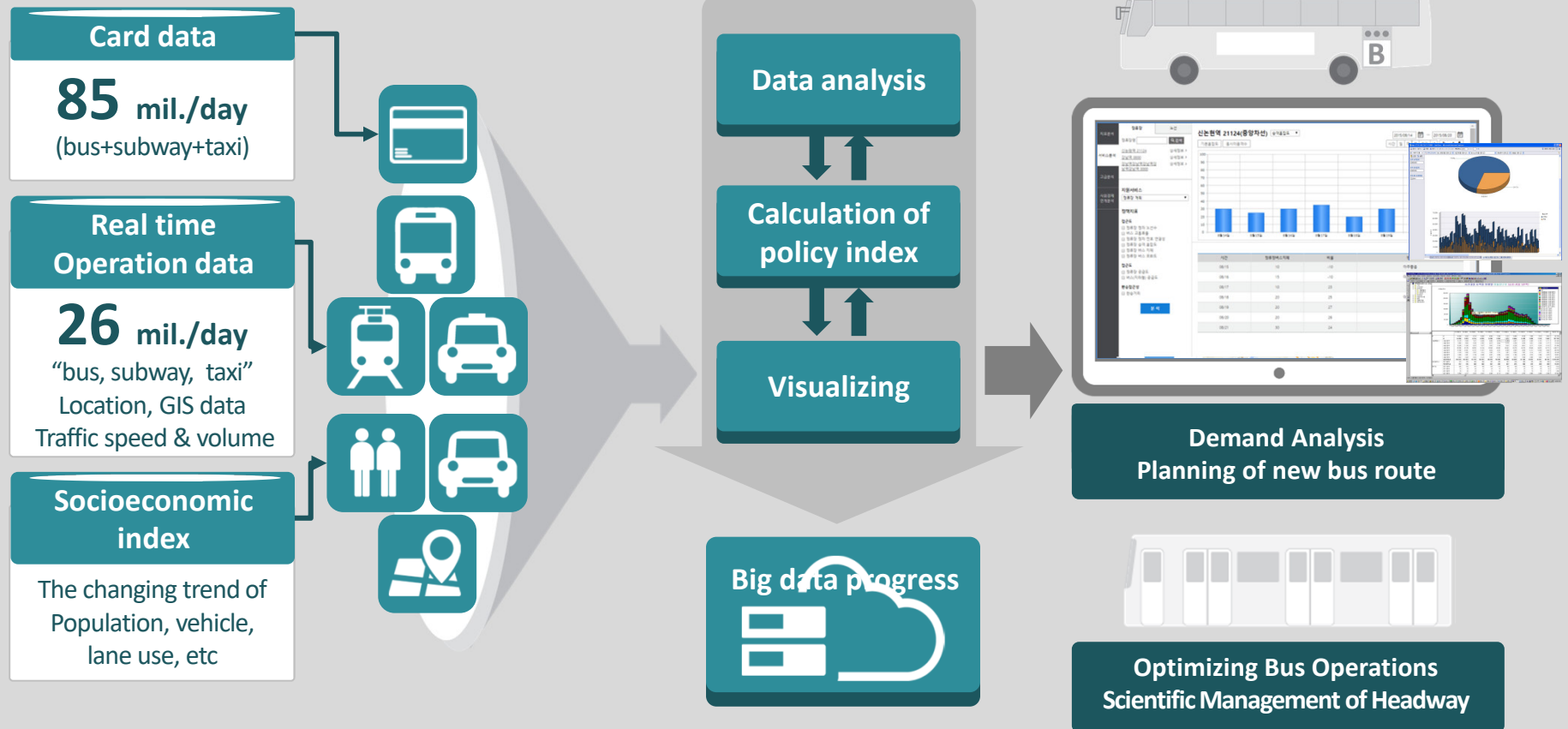


Source : The future of urban mobility, Arthur D. Little

Bus Operation Policy based on Big Data Analysis

Advanced Public Transportation System
In Seoul

Bus Management &
Information System





Thank you!!

Questions?: wonor@si.re.kr