UN HABITAT
FOR A BETTER URBAN FUTURE

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Development of Public Transportation and BRT in Korea

17 Apr. 2013

ChoongYeol Peter Ye

Vice President for Planning & Administration

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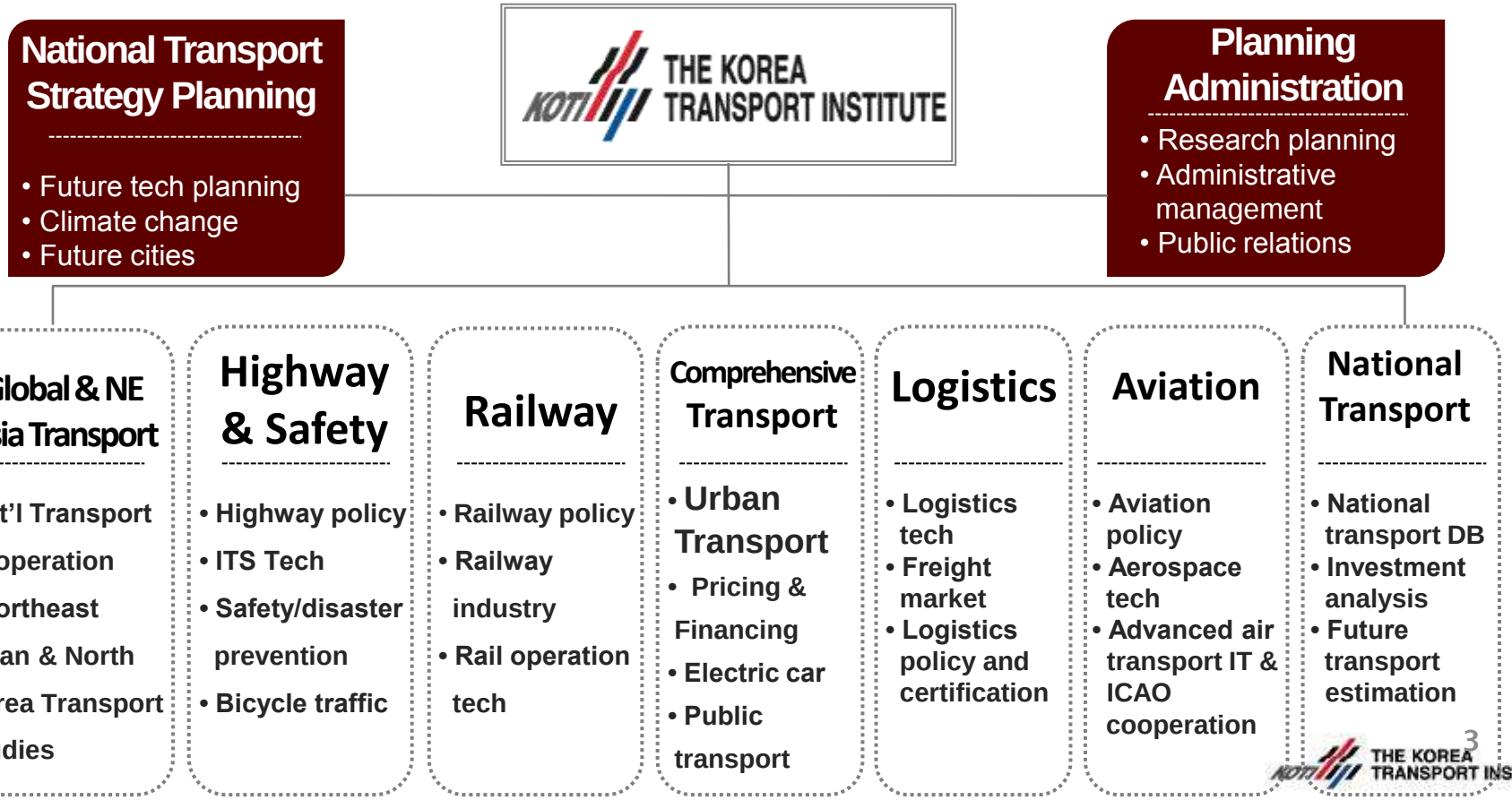
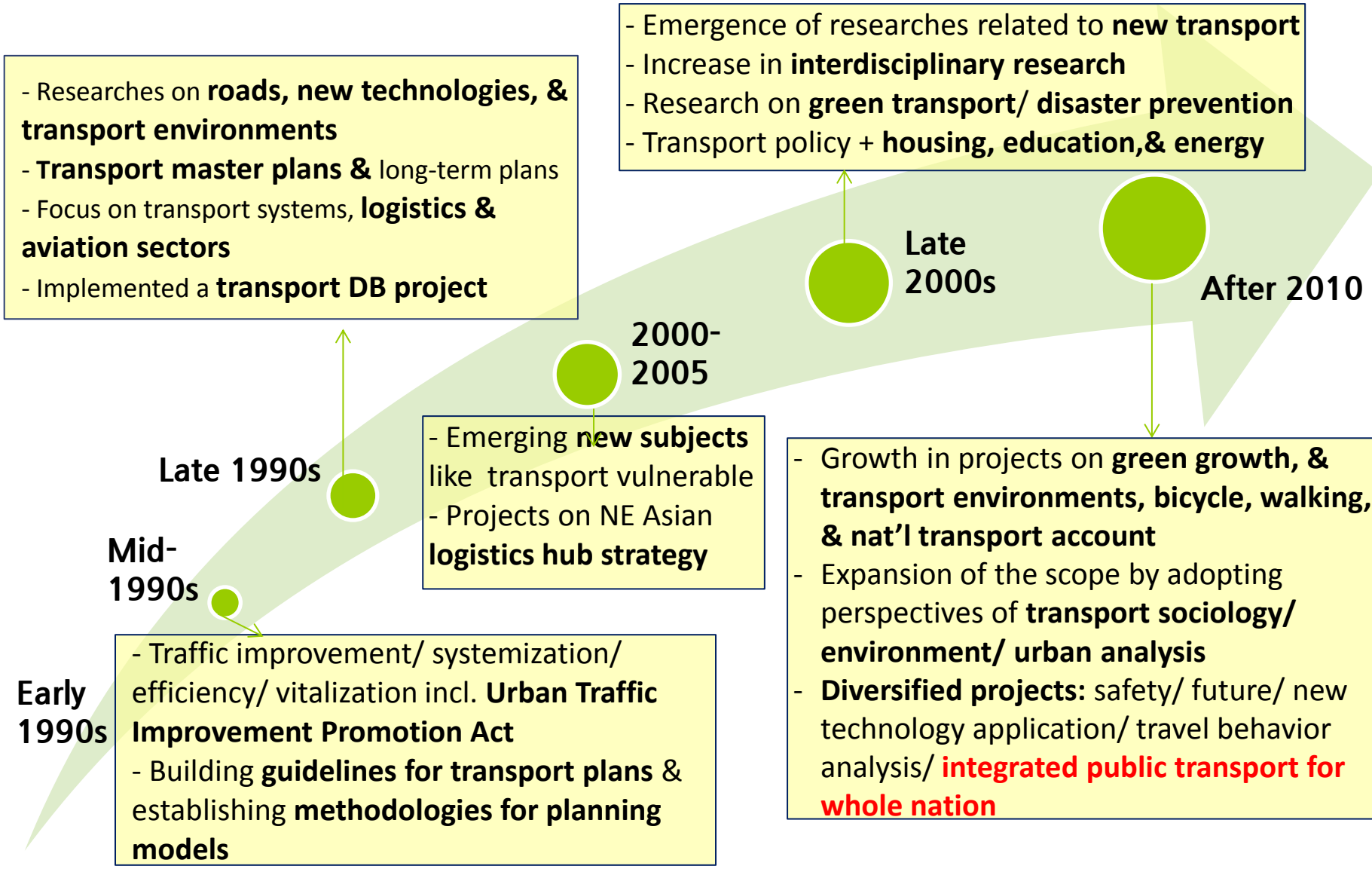
1. A Champion Research Institute

- **A research institute** on transport & logistics Policy & Tech.
  - Established in **1986 by Ministry of Transport**
  - Governance under **Prime Minister's Office** since **1999**



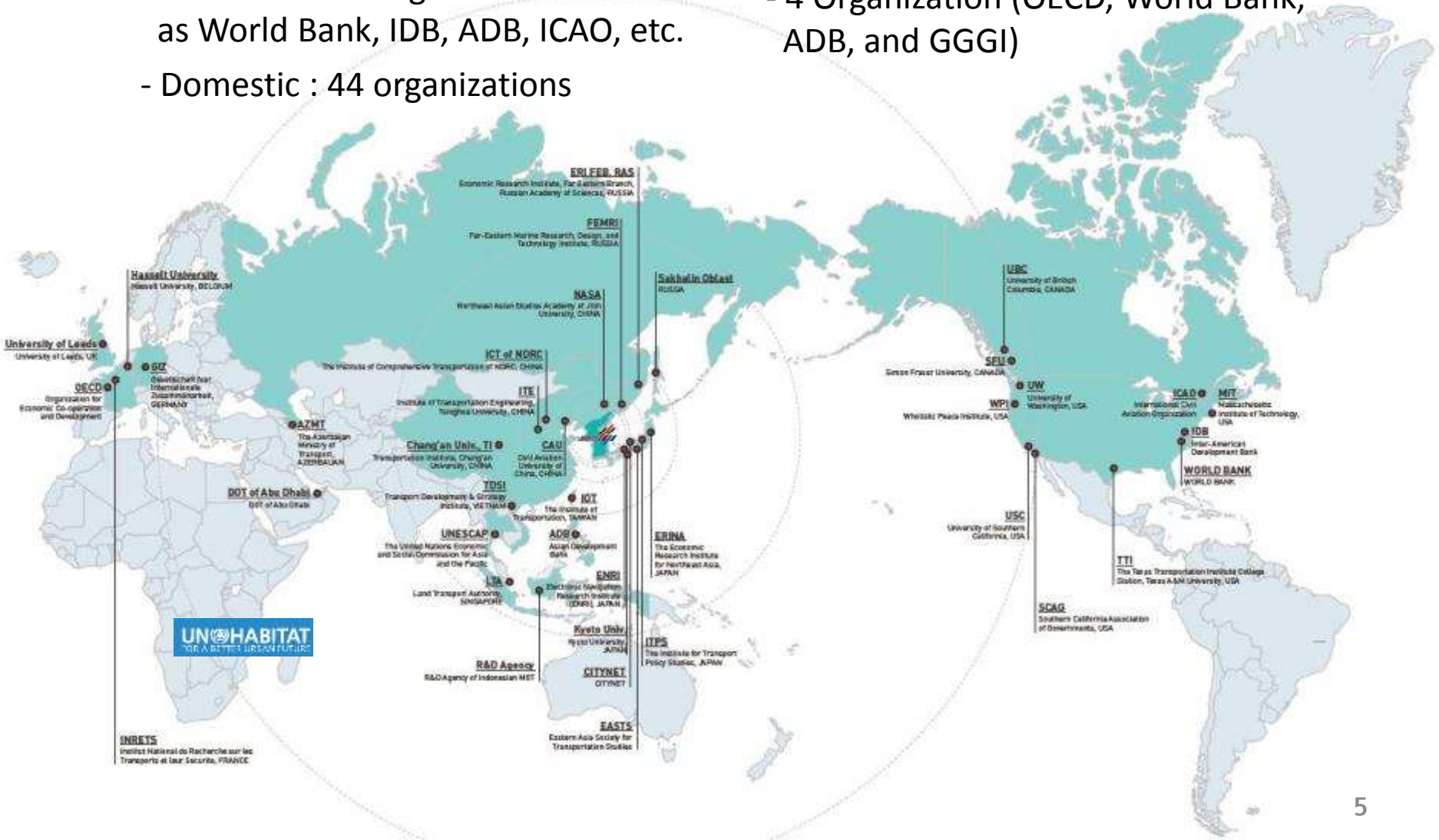
2. Changes in Research Topics at KOTI



3. Cooperation with other organizations

- **MOUs**
  - Overseas : 35 organizations such as World Bank, IDB, ADB, ICAO, etc.
  - Domestic : 44 organizations

- **Secondment to Int'l Organizations**
  - 4 Organization (OECD, World Bank, ADB, and GGGI)



3. Cooperation with other organizations

- **Annual Joint Seminars with MOU partners**

KOTI-World Bank Joint Seminar

2011:
Transport System for Climate Change & Green Growth

2012:
Transport Systems to Reduce Climate Change and Promote Green Growth

2013:
Sustainable Transport & logistics system supporting economic growth

KOTI-OECD Joint Seminar

2011:
Cycling Safety

2012:
'Seamless Public Transport for all'

2013:
Transport Financing

KOTI-ICT China Joint Seminar

2009:
Korea-China's Cooperation in Transport and Logistics Sector for Green Growth

2012:
Seminar on Sharing Comparative Experiences of Korea & China's High-Speed Rail Operations

2013:
Scheduled in July

KOTI-EWC, USA Joint Seminar

2011:
Opening Northern Sea Route and Dynamic Changes in the North Pacific Logistics and Resource Security

KOTI-ITPS Japan Joint Seminar

2011:
'Intercity Transport System in Asian Countries'

2012:
'Intercity Transport System in Asian Countries '

2013: Scheduled

4. Oversea consulting Projects

Building Master Plans	- Airport: Khabarovsk Int'l Airport (Russia), Mactan Cebu Int'l Airport (Philippines) - Railroads: National Master Plan (Cameroon) - Roads: Sumatra (Indonesia) - ITS (Mongolia, Mozambique)
Feasibility Studies	- Connecting railway for 5 ASEAN countries - Oversea bridge in Baku Bay (Azerbaijan) - Clark Int'l Airport (Philippines)
National Transport Networks Design	- Mid-term investment in infrastructure (Libya) - Investigating business formation (Philippines)

5. Knowledge Sharing & Capacity Building

Policy Consulting Program

- Sharing Korea's experiences on developing transport infrastructures, public transport systems, ITS, KTX, logistics system, airport system, etc.
- Type 1 : Consulting Projects
- Type 2 : Dispatching expert groups
- Type 3 : Capacity building programs

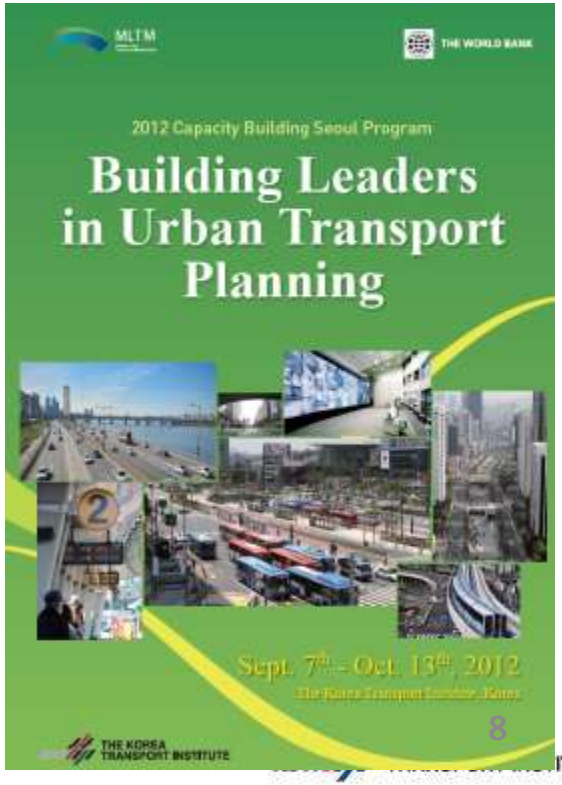
Development of Experience Module

- Publishing Knowledge Sharing Reports with the contents of best practices of Korea

Capacity Building with Int'l Organizations

- Developing education and consulting projects with the World Bank, ADB, Citynet, etc.

ex) Leader's in Urban Transport Planning Seoul, etc.



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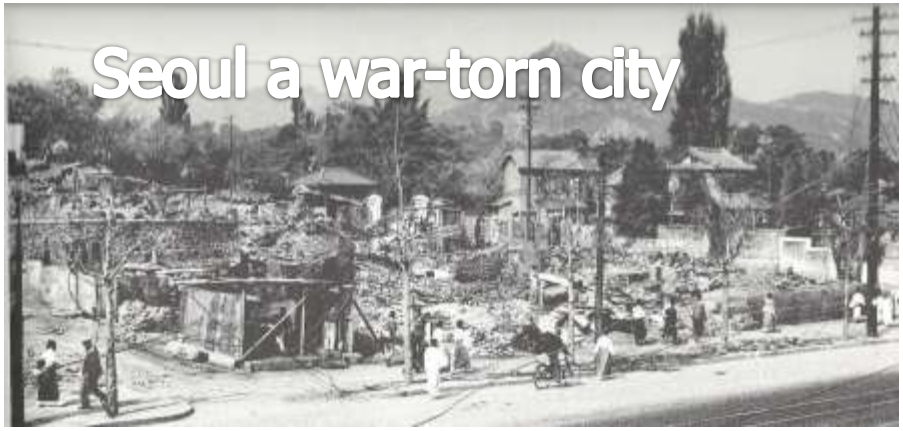
1. Korea's Transport Model



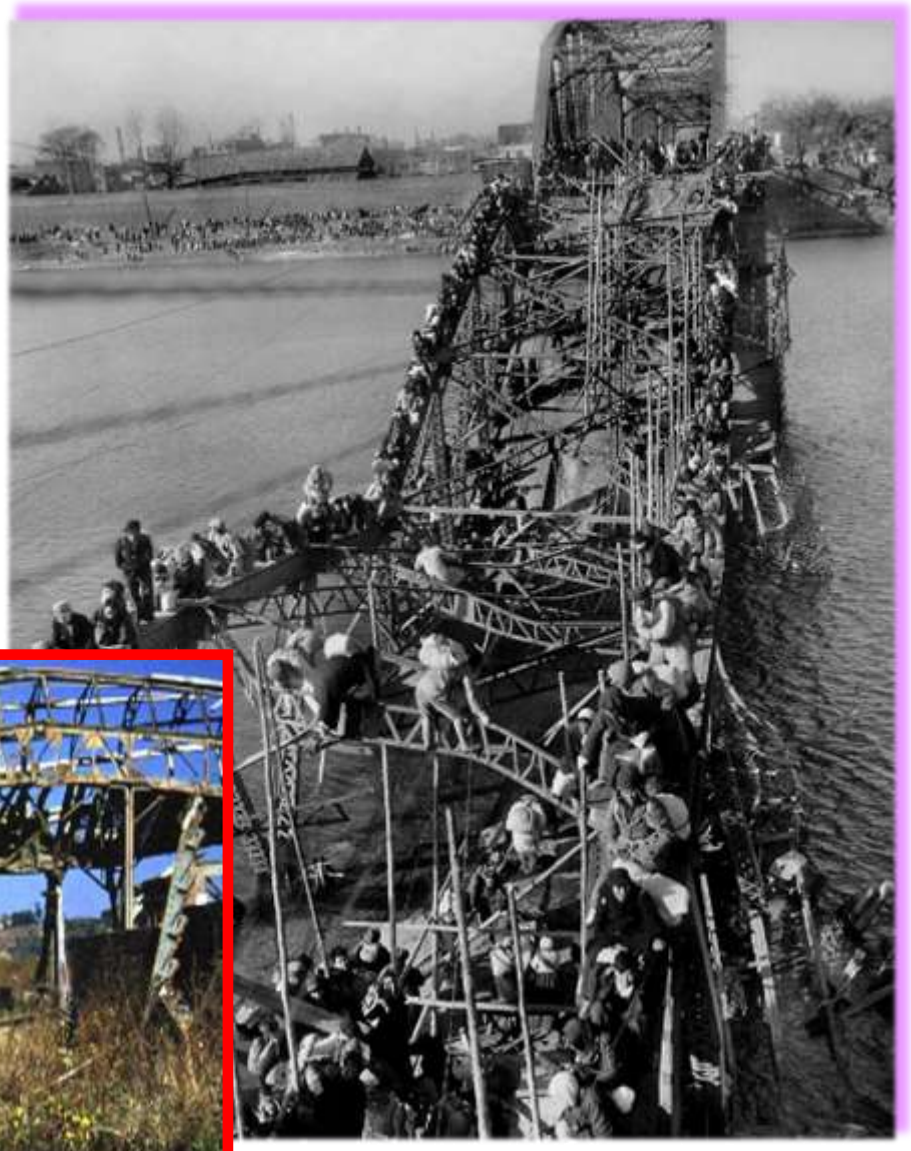
1950

2011

Key Features of Korea's Transport Model

- Timely Transport Investments
- Financing: Transport Infra. Special Account
- Highway-Based Public Transport
- Utilization of ICT for Pubic Transport

Korean War(1950~1953)



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2. History of Urban Transport Investments

1899
- 1st tram operation in Seoul

1928
1st city bus service Kyungseong

1961
Passenger business regulation

1969
Suspending Seoul tram

1970
Vehicle restriction regulation in Seoul

1977
Vehicles registration number exceeded 0.1 million`

1987
Urban Transport Act :Traffic Impact Assessment, Establishment of KOTI

1996
- Congestion charge : Namsan 1,3 tunnel

2005
Cheonggyechoen restoration

Beginning of Public Transport | **Introduction of subways** | **Rapid Motorization / TDM** | **Environmentally-friendly, Human-oriented Transport**

1960 | 1970 | 1980 | 1990 | 2000

Post-war population Influx to the capital city | Rapid urbanization Industrial city development | New town development Multiple nuclei urban development | Sustainable development Urban regeneration

1912
- Launching 1st passenger business : mini- bus services
- Taxi-hiring business

1967
- City-operated bus between the center and outskirts

1974 ~
- Opening of subways in Seoul

1984~85
Introduction of TSM to deal with increasing traffic on road

1999~
5-year transport integration plan
Planning of bus system reform

2004
Opening of BRT in Seoul
Operation of integrated transit fare system

2006
A promotion act for the mobility handicapped

3. Exploding Traffic with Rapid Economic Growth

- **Population: doubled**

  1970 : 5.4 million

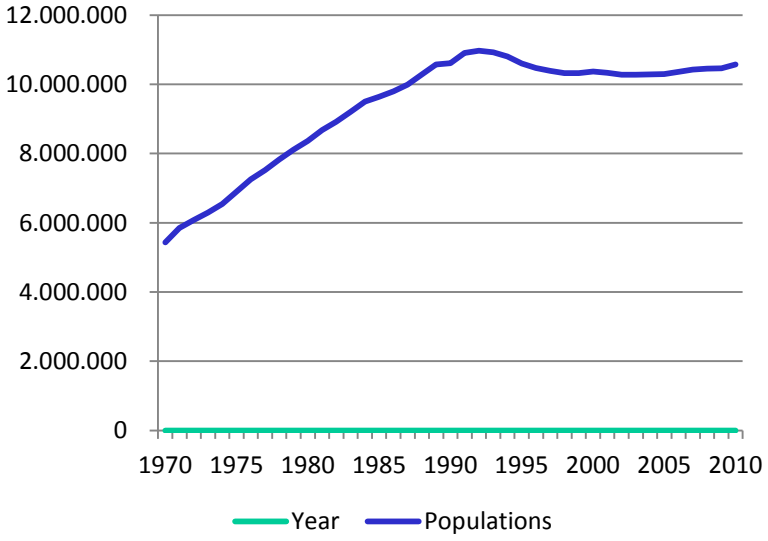
  2010 : 10.5 million

- **Registered vehicles: 49 times**

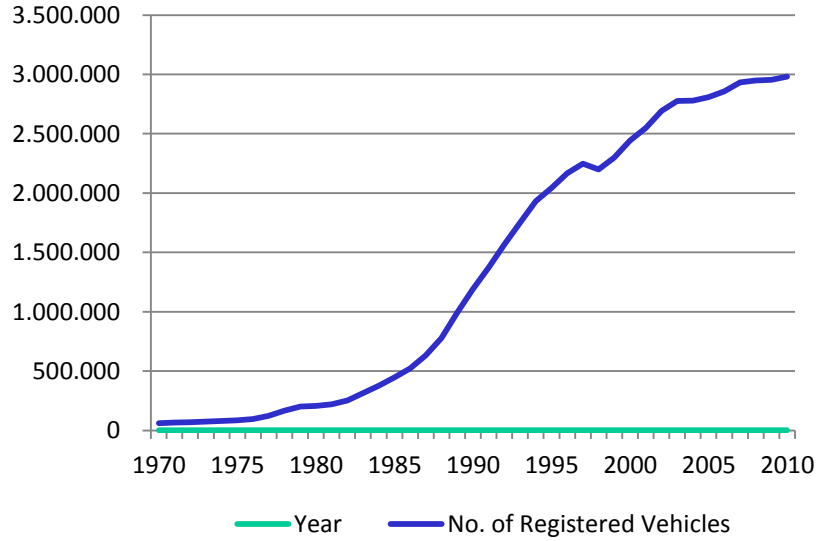
  1970 : 60 thousands

  2010 : 2.98 millions

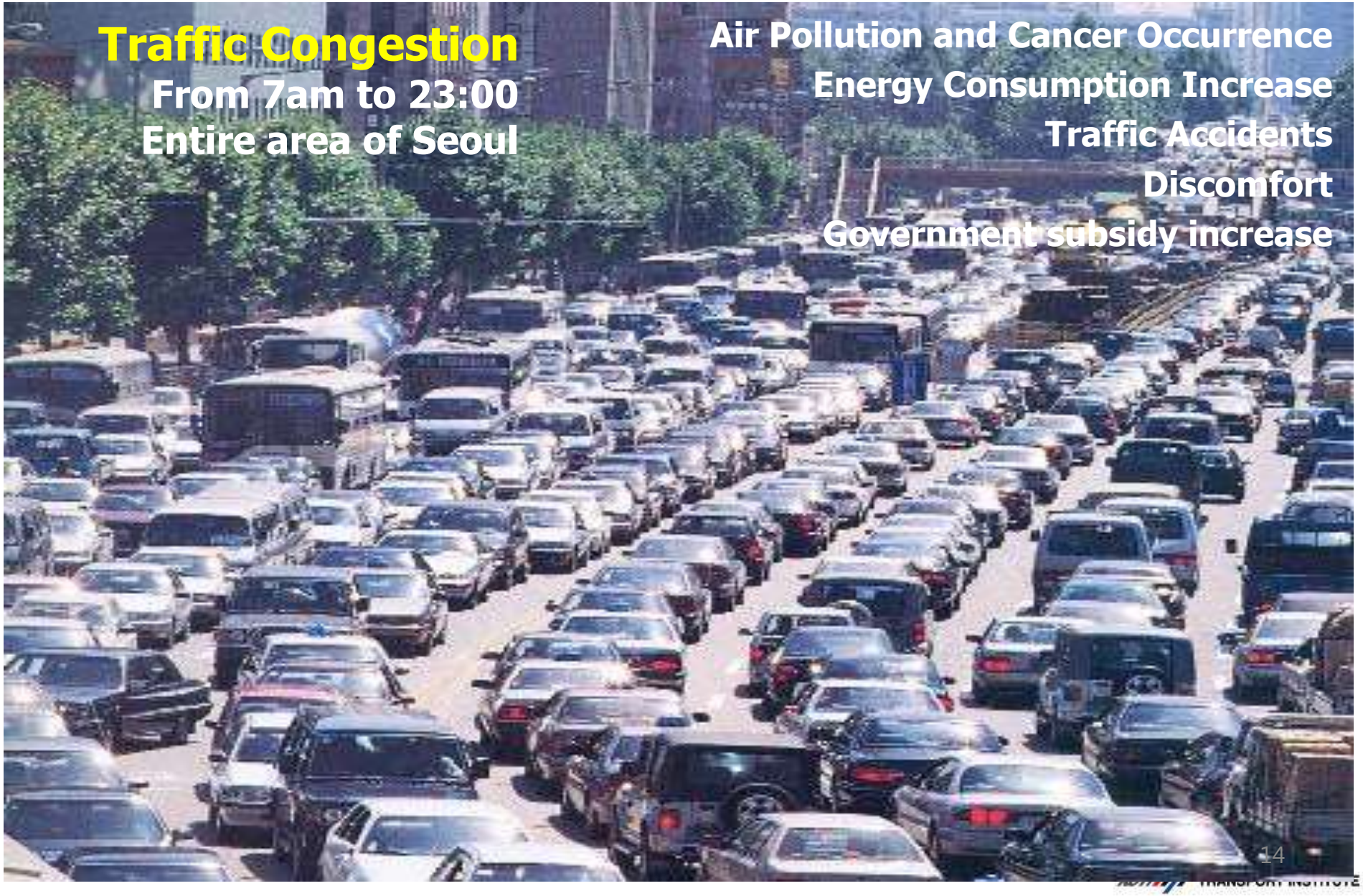
[Population of Seoul]



[Registered Vehicles in Seoul]



4. Gridlock in Seoul in 90's



5. Bus and Chaotic Roads

Increase in total bus operation costs

Rivalry road trips

6. Push and Pull Strategy

Restructuring Urban Transport Policy (Jul. 2002)

"TDM", "Restoration", "BRT", "Pedestrianism"

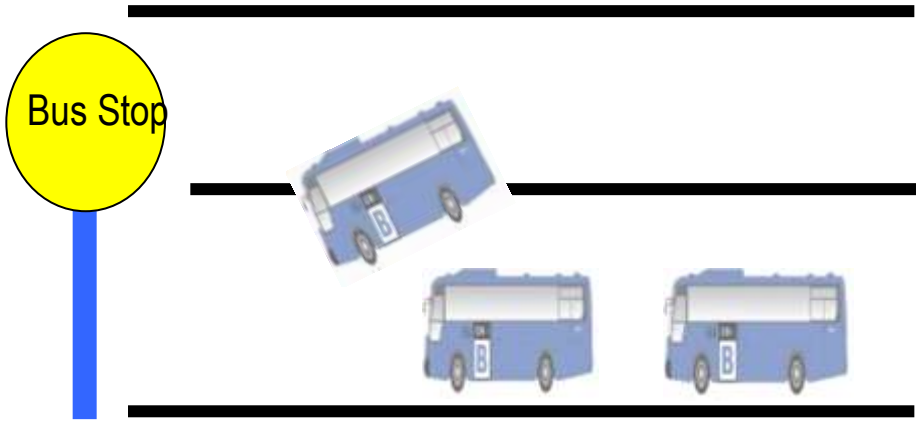
- **Transit System Reform** **- MULTI-MODAL INTEGRATION**
  - **Physical** (between modes (Stations + Stops))
  - **Network** (Railway, Bus, and others)
  - **Fare** (Equity, Providing incentives)
  - **Information** (Seamless transfer)
  - **Institutional** (Custom-based)
- **Urban Space Reform**
  - **Greening of Car Space**
  - **Pedestrian Friendly Street**
  - **Culture Re-creative Space**

7. Change in Bus Revenue System

Before

- Revenue based on **the number of Passengers**
- Rivalry interruptions
  - Chaotic roads
  - Reckless driving
- Drivers vs. Passengers

→ **Poor Service Quality**



After

- Revenue based on **service distance** for the passengers (No. of vehicles × km) + **BMS**
- Drivers became friendly
- No route ownership

→ Effective route reorganization

→ Decrease in total operation cost

→ Decrease in gov't subsidy

→ **Better Service Quality**

8. Priority Median Bus Lane

- Introduced in 2004 by the Seoul City Government
- Transit Network of Median Exclusive Bus way
  - Seoul Metropolitan Area: 13 corridors, 157km (2011)
- Provides faster and reliable travel within the service area

Before

After the Priority Median Bus Lane

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9. From Car-orient to Transit-oriented

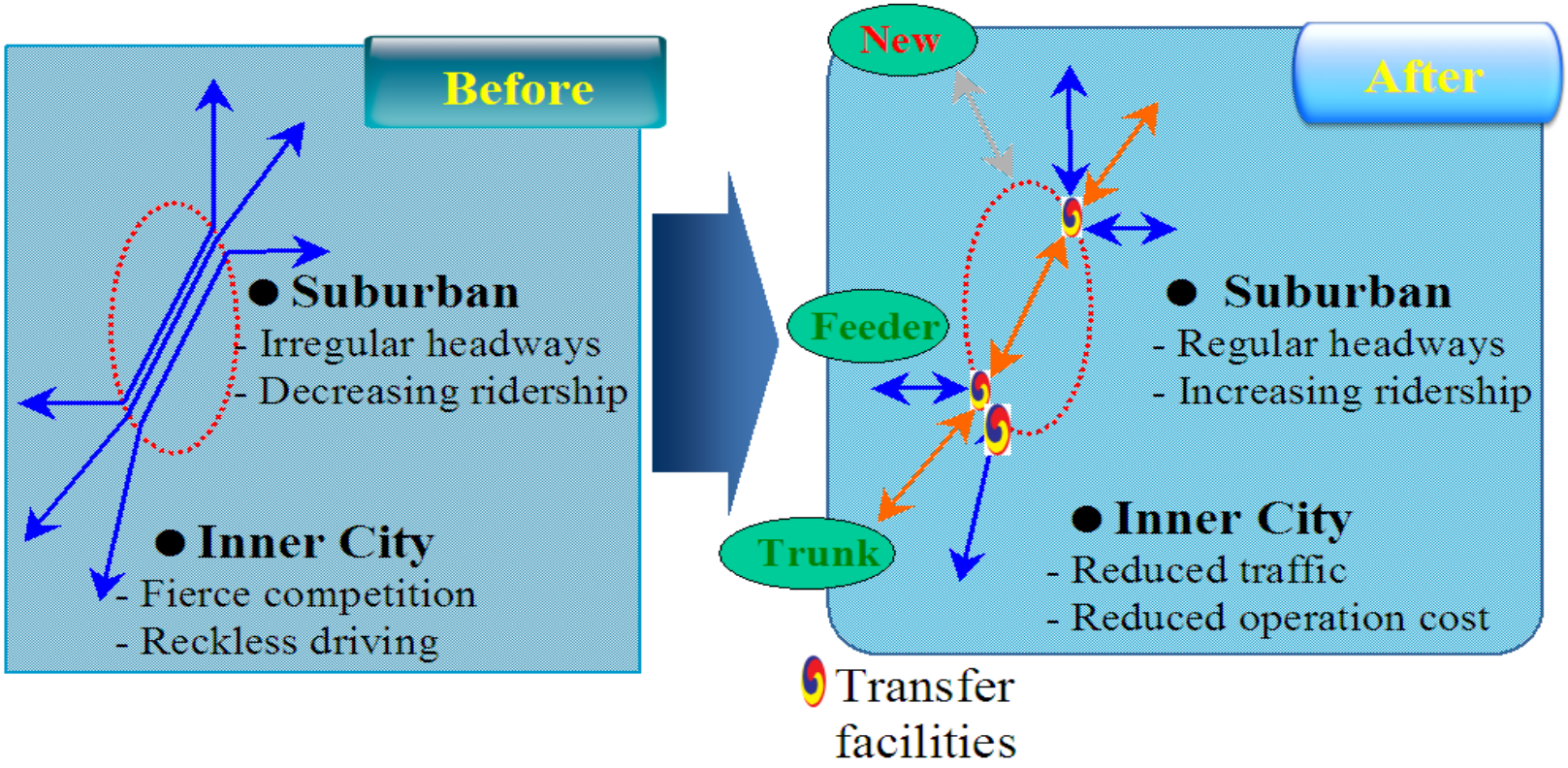
- **Speed Increase for both buses & private cars:**

  From 10 km/h to above 20 km/h

- **Increase in passenger capacity:**

  6 times more passengers than other lanes

10. Bus Rerouting



Increase	Decrease
- Network Capacity (new Bus Route & BRT) - Bus ridership - Bus Frequency (Keep Interval) - Bus Company Revenue	- Total Bus Operation Cost - Subsidy of SMG

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11. Functioning and Coloring of Buses

- **Operating 4-types of Buses**
  : Trunk Lines · Feeder Lines · Circular Lines· Wide Area Lines

● Regional connection between suburbs and downtown ● Ensuring operation speed & punctuality	Trunk lines	Blue bus	
● Connections between feeder & trunk/subways ● Meeting local traffic demand	Feeder lines	Green bus	
● Local lines within the downtown areas ● Serving for business and shopping trips	Circular lines	Yellow bus	
● Express connection between satellite cities and downtown area ● Absorbing passenger car commuters	Wide area lines	Red bus	

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12. New Numbering System

- **O-D identification with new numbering system**

Trunk line (Blue)

1 0 1

Starting from North-East, arriving at Downtown trunk line # 1

Wide area line (Red)

9 1 1 2

Starting from Ujongbu, arriving at Downtown wide area line # 1

Feeder line (Green bus)

1 0 1 2

Starting from North-East, arriving at Downtown feeder line # 12

Circular line

4 1

Circular line # 1 in Gangnam

13. Fare Collection

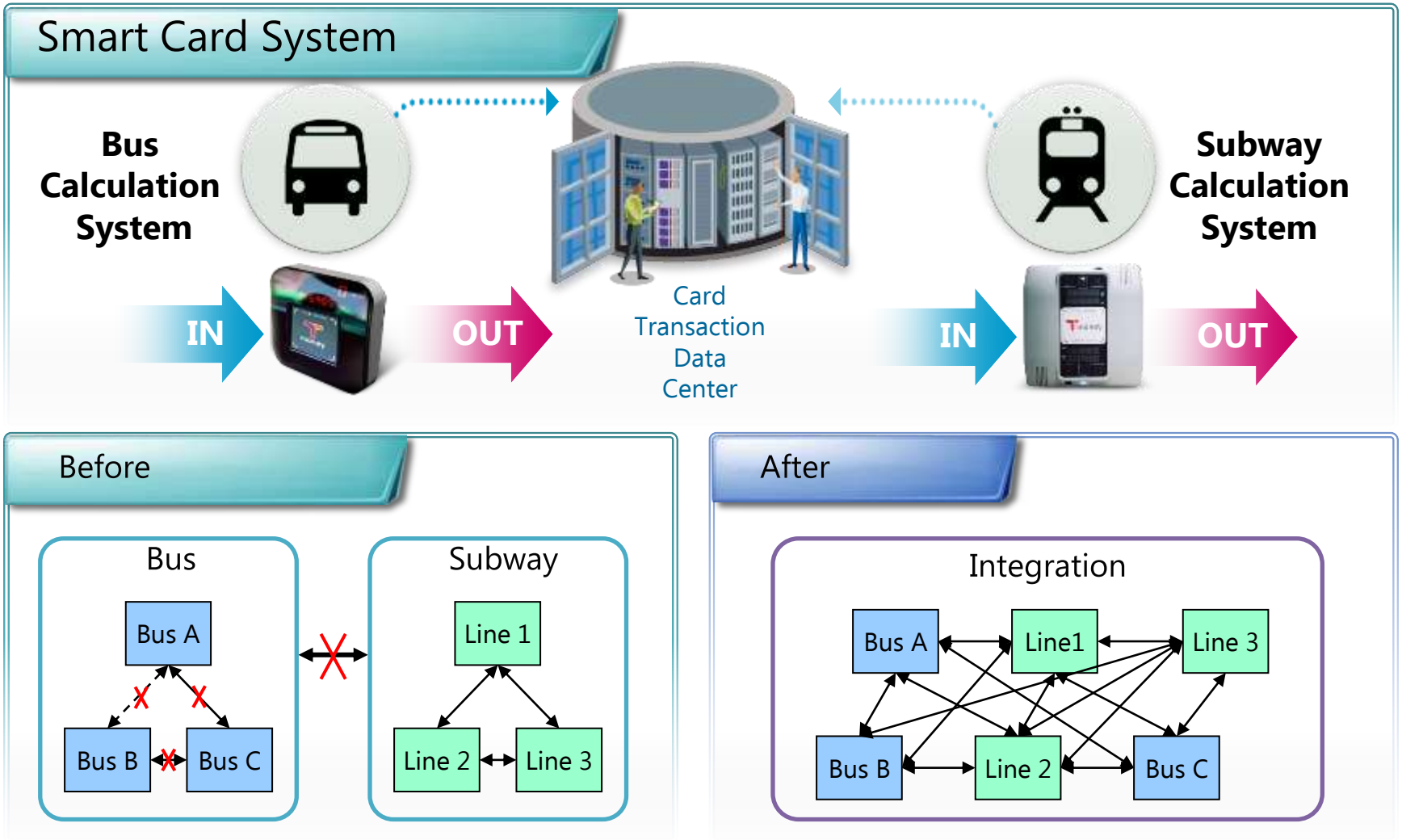
- **T money Card**
  - Smart Card, credit card, etc.

- **Distance based fare**
  Subway single trips
  : fare by distance-traveled
  (base of 800 KRW up to 12km,
  additional 100 won per 6km)

  Bus single trips: single fare of 800 KRW

- **Free of charge for transfers**
  For transferring trips
  : accumulated distance-based fare
  → basic fare up to 10km;
  additional fare per 5km

14. Fare Collection and Settlement



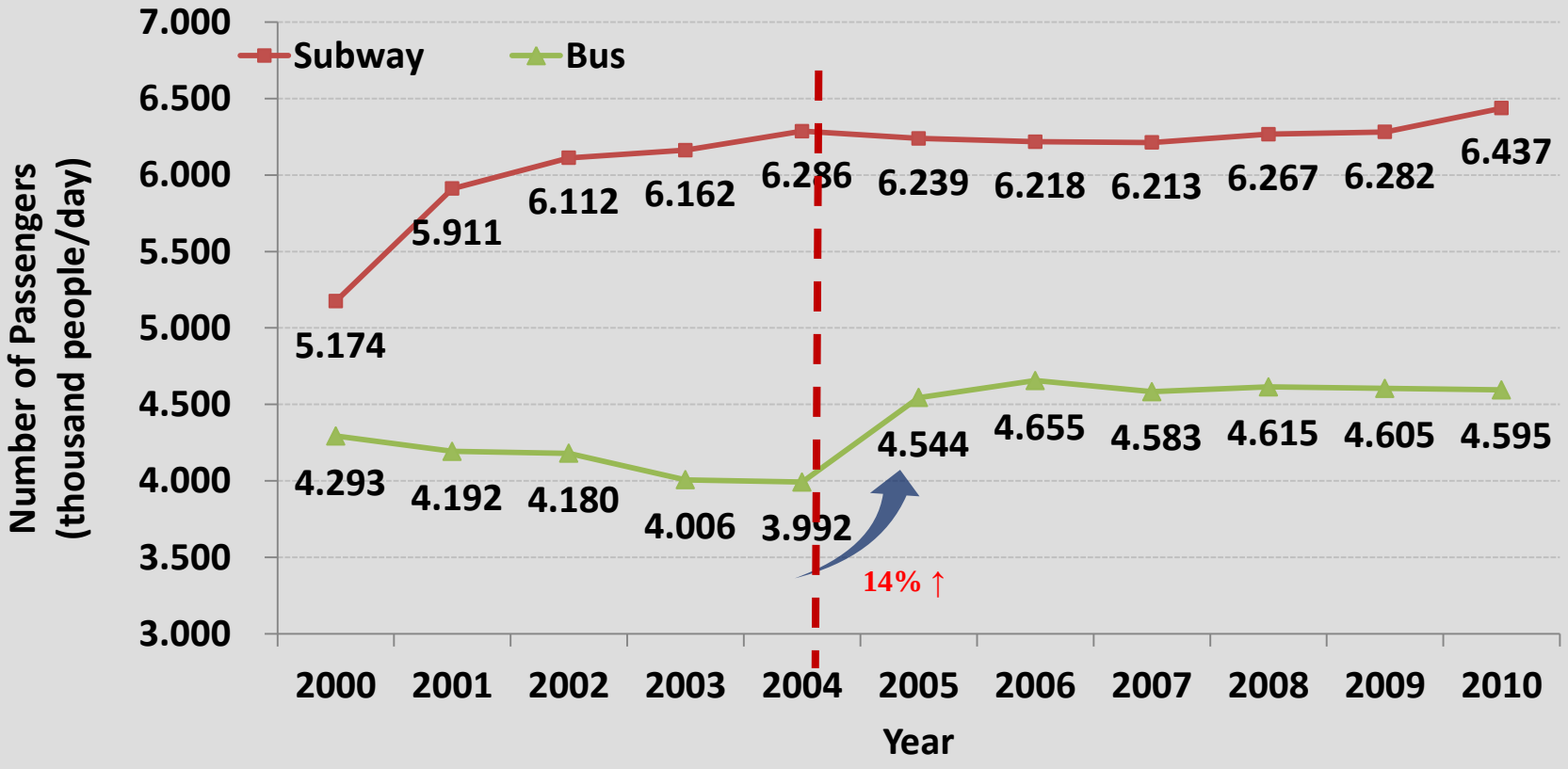
15. Bus Information System

Information Display at bus stop

Smart Phone Application

16. Increased Bus Ridership

☐ Trend of Ridership



※ Subway ridership excludes free-pass holders.
Source : Seoul Year Book

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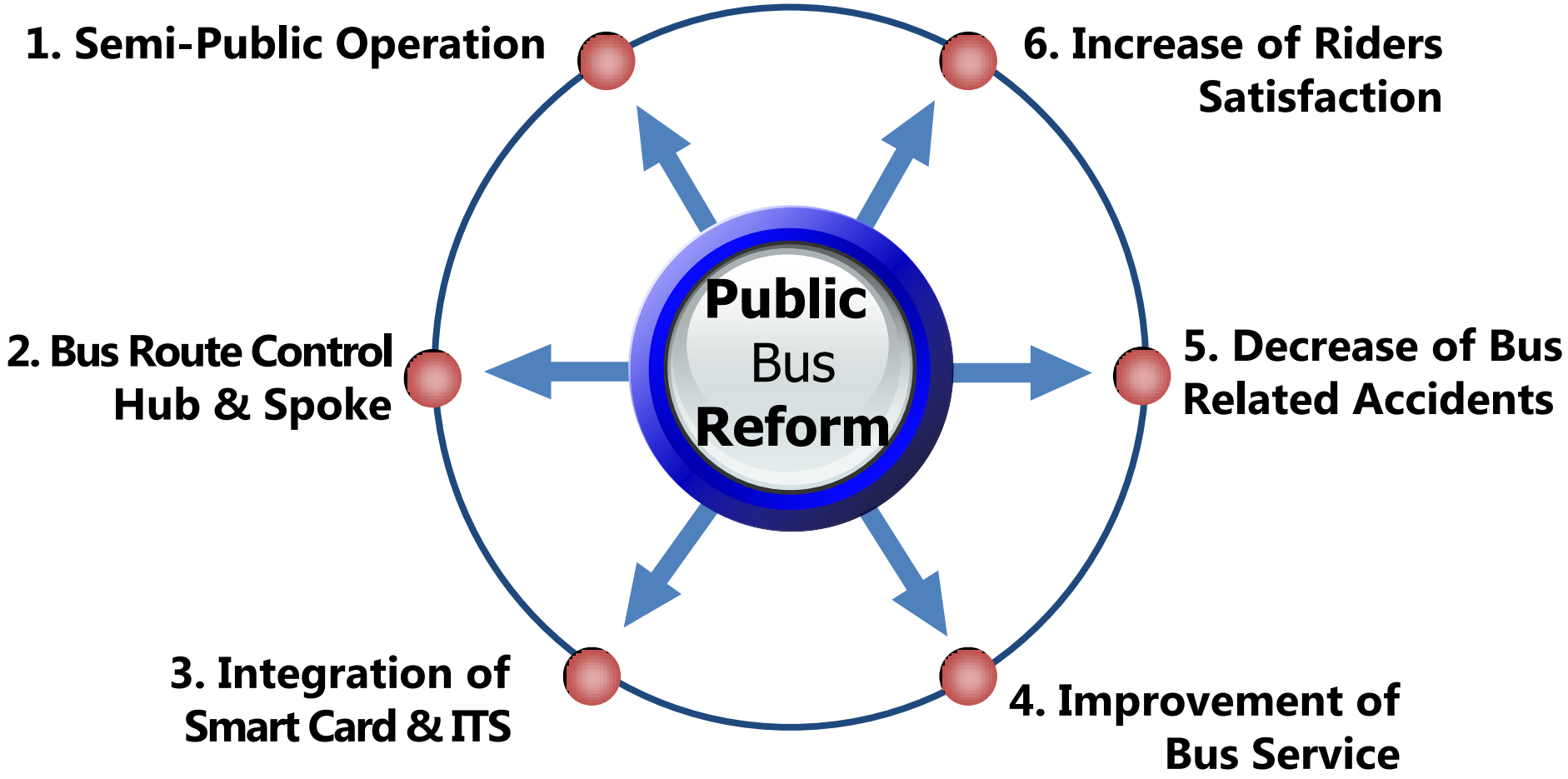
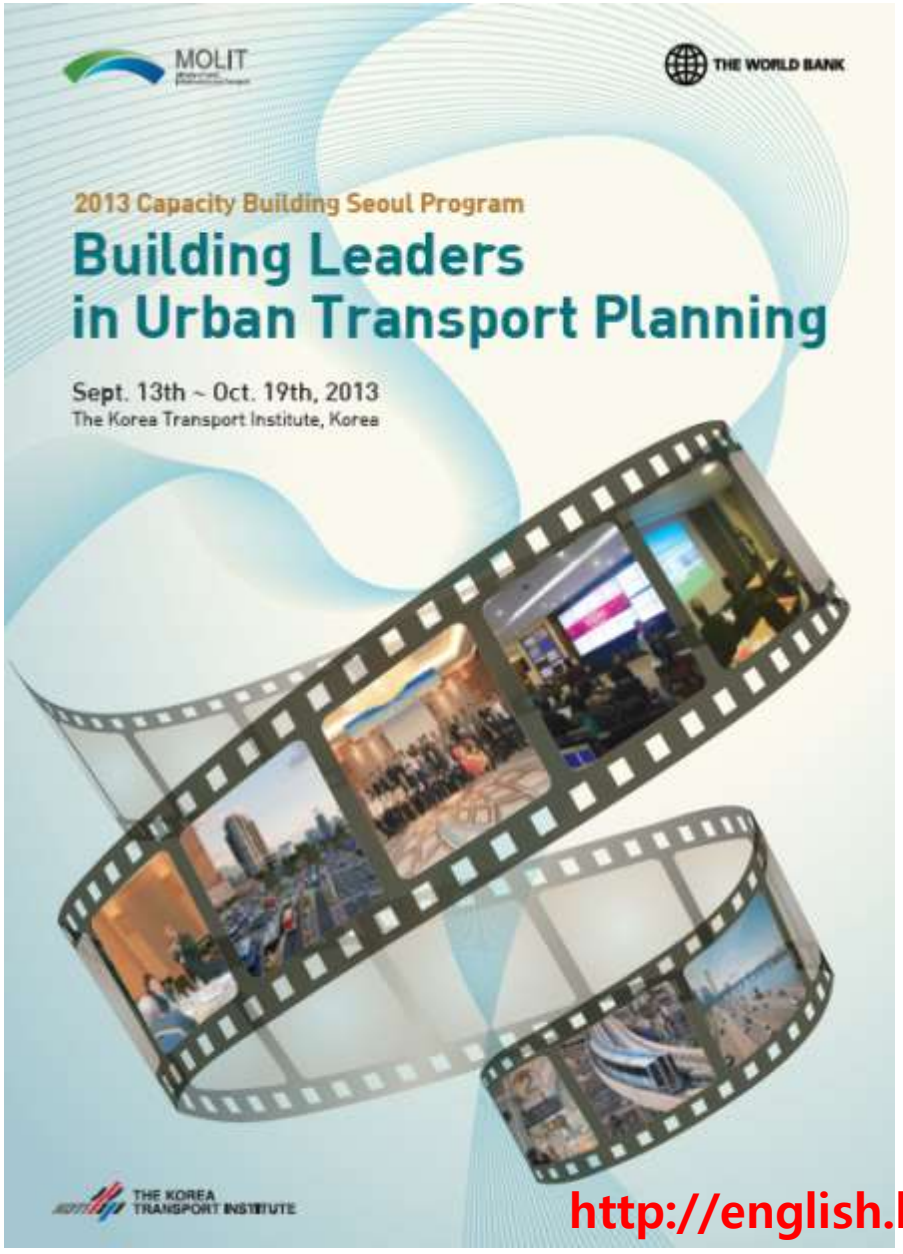


2. 2013 LUTP Seoul (Oct. 13 ~ 19, 2013)



http://english.koti.re.kr/LUTP2013/overview.asp

KOTI enriches the future by securing harmony among humans, the environment and transport.

- ChoongYeol Ye : ycy@koti.re.kr
- KOTI : www.koti.re.kr

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