

# Current Strategy under Competitive Transport market and JR East future vision



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**Toshiaki SHIGA**

Executive Director , Brussels Branch  
East Japan Railway Company (JR East)

- 1 4 features of JR East Management**
- 2 Competitive situation around us**
  - 1 HSR vs. Air**
  - 2 HSR vs. Highway bus**
  - 3 Urban transit**
  - 4 Competition with new mobility solution**
- 3 The vision for the future of railway**
- 4 Questions in advance**

# **1 4 features of JR East Management**



# 1 4 features of JR East

## 1. Vertical structure

We own, operate and maintain all the railway infrastructure as **fully integrated railway**.

Network: **7,513 km**

Trains: **13,000 /day**

### Diversification



Life-style business



IC card

### Operation

Various transport modes



Trains



Buses

### Maintenance

Infrastructure  
Rolling Stock



Tracks



Signals

### Ownership

infrastructure



Tracks



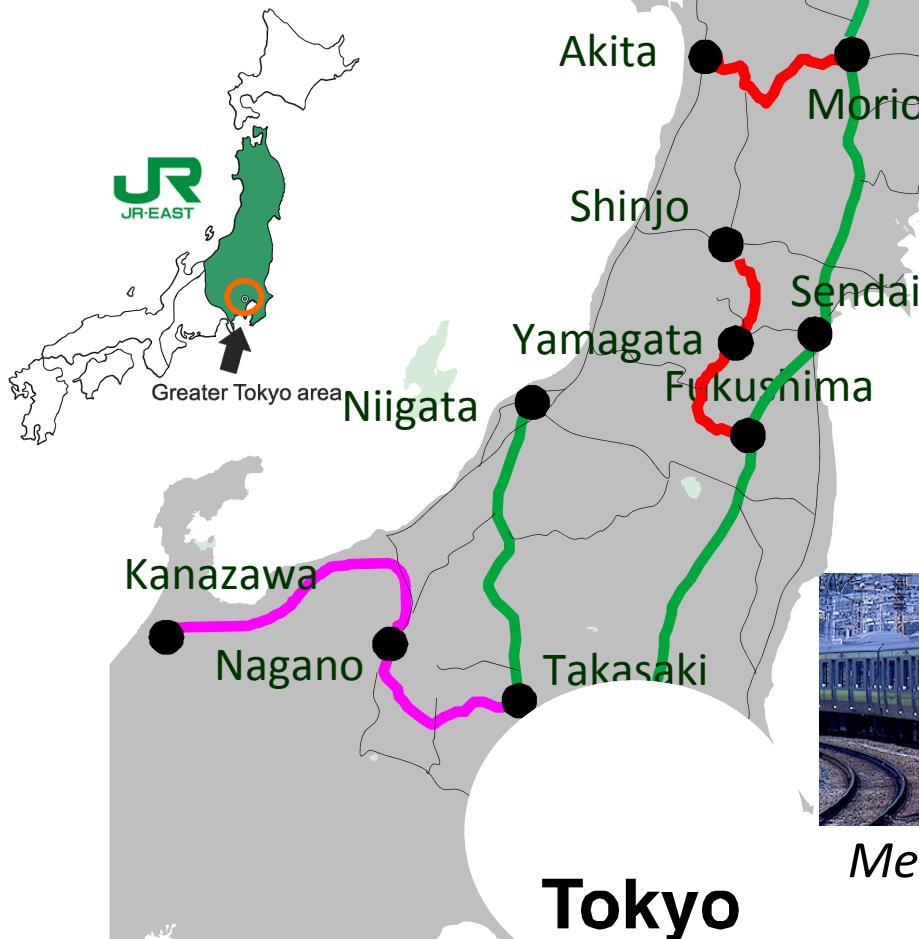
Power Plant

# 1 4 features of JR East

## 2. Horizontal structure

- Shinkansen Network:

5 directions



We own and operate all categories of railway transport.



High-speed

No. of Passengers:  
**17.1 million** /day

The  
largest  
in the  
world !!



Metropolitan

Integrated  
Railway  
Network

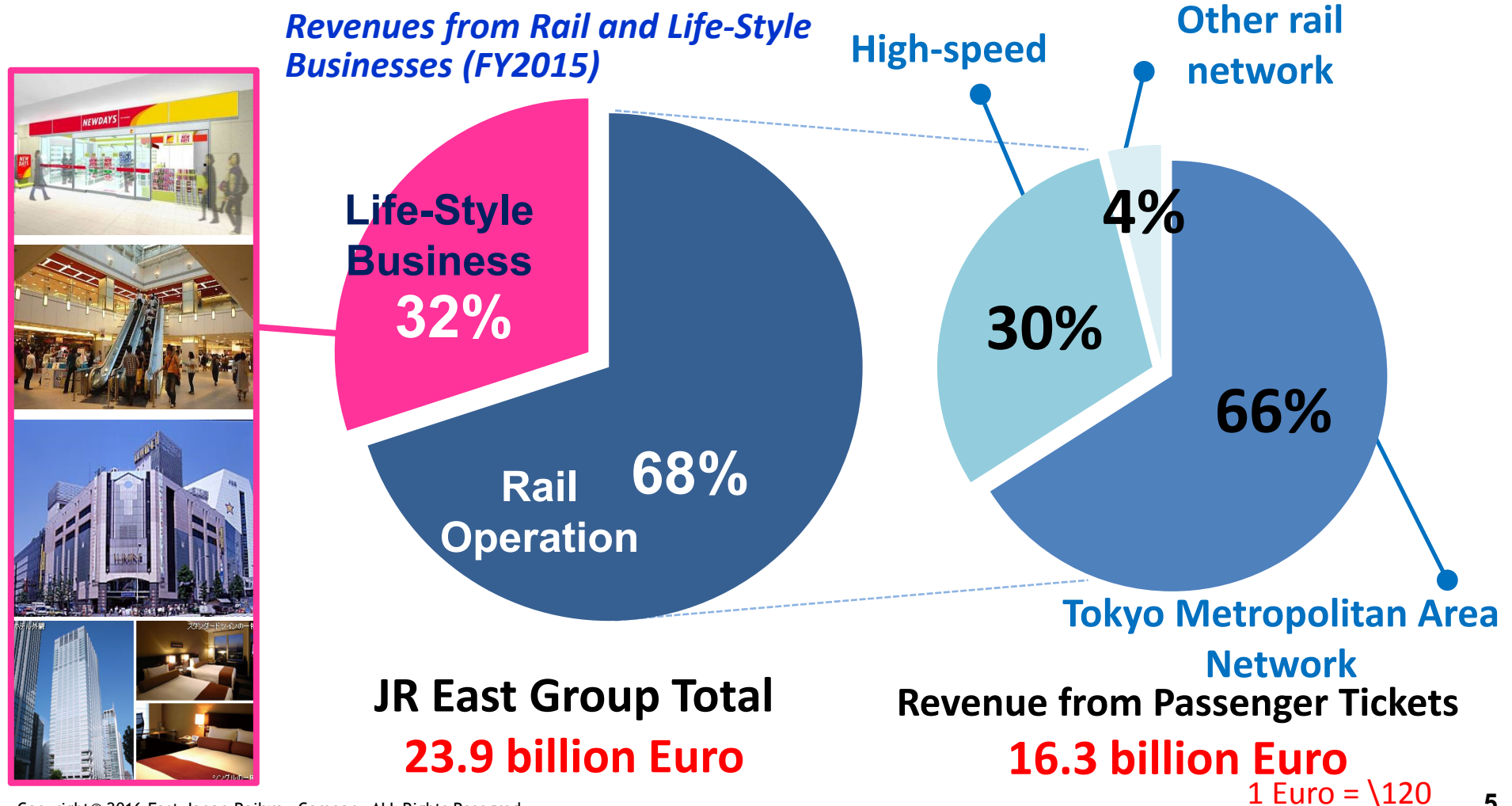


Regional

# 1 4 features of JR East

## 3. Business structure

We own and operate non-transport business utilizing asset for and around railway operations.

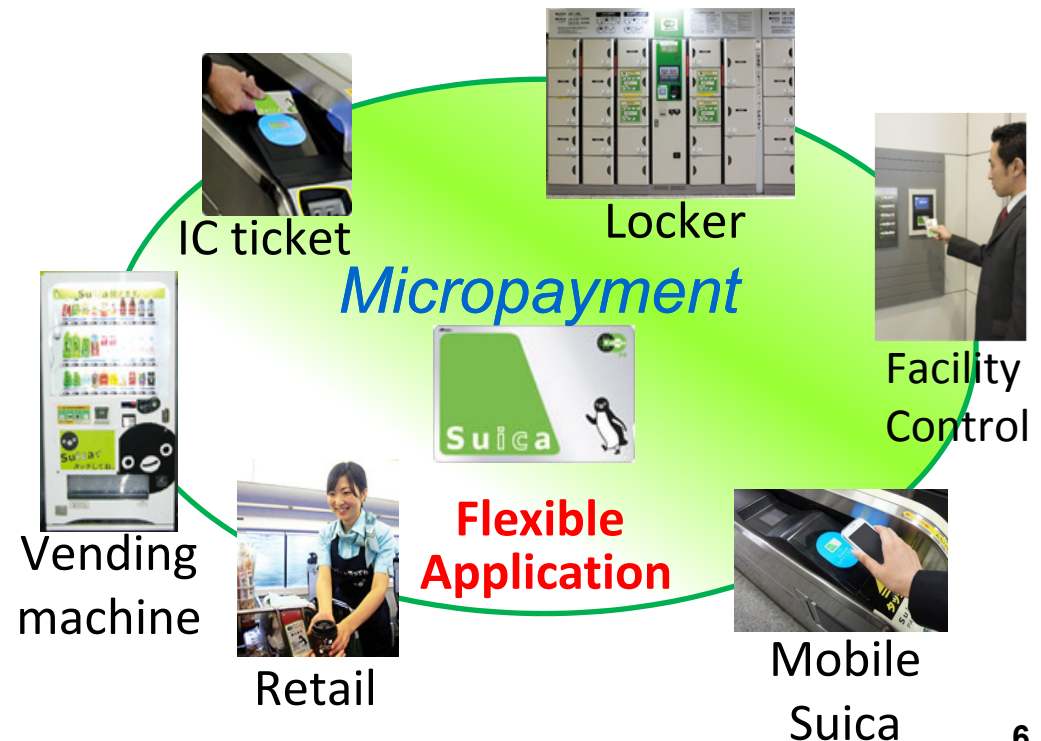


# 1 4 features of JR East

## 4. Micropayment

- The first IC card ticketing system introduced in Japan by JR East  
(Nov, 2001)
- Micropayment launched by the same card  
(March, 2004)
- Mutual usage service of 10 transportation IC cards completed  
(March, 2013)

- ✓ *142 Operators*
- ✓ *IC card holders: 100 mil.*
- ✓ *Transactions per day total:*  
*130 to 150 million.*  
*(single trip with IC, IC commuter pass, e-money)*
- ✓ *Transaction Speed: 0.2 sec.*



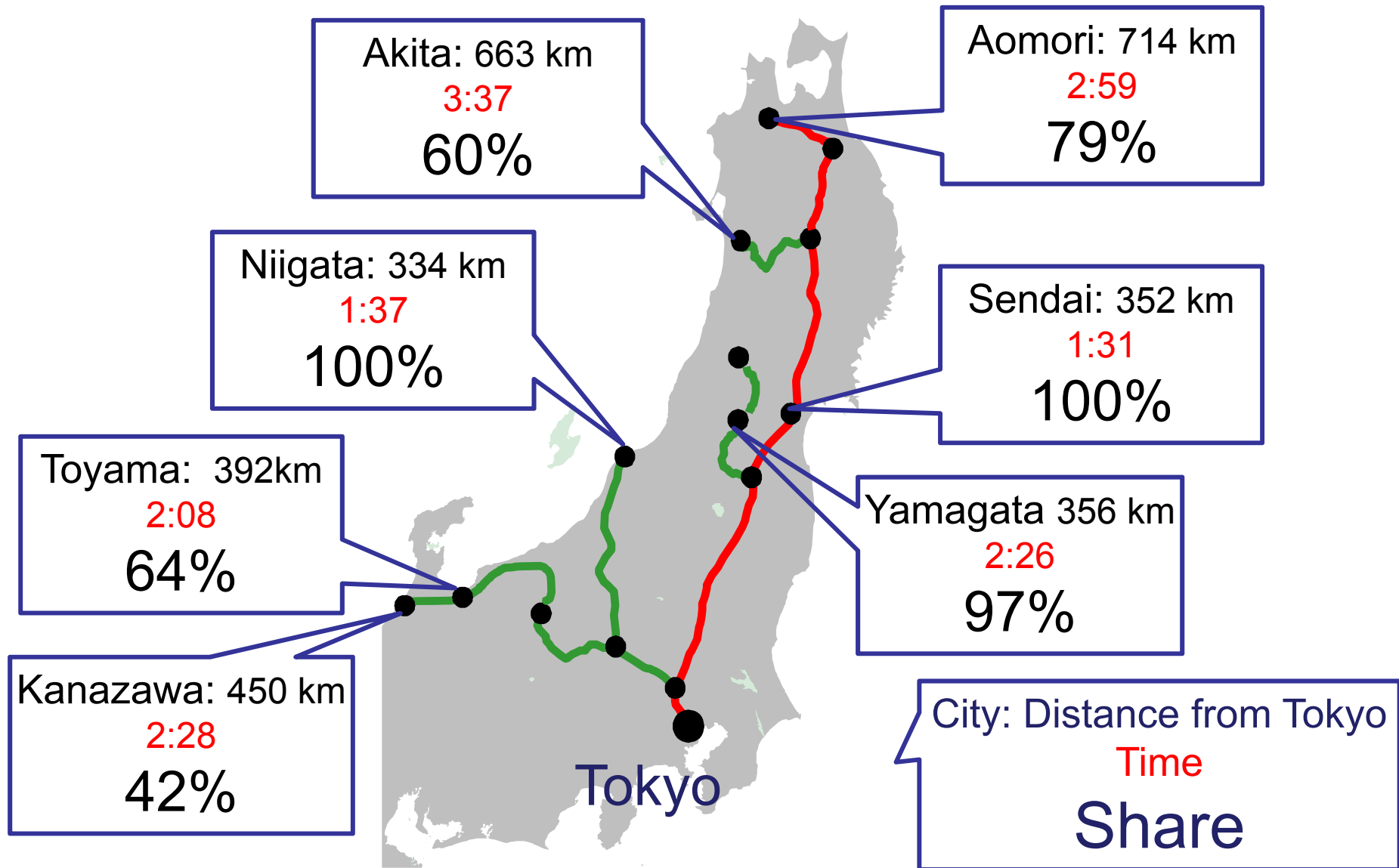
## 2 Competitive situation around us





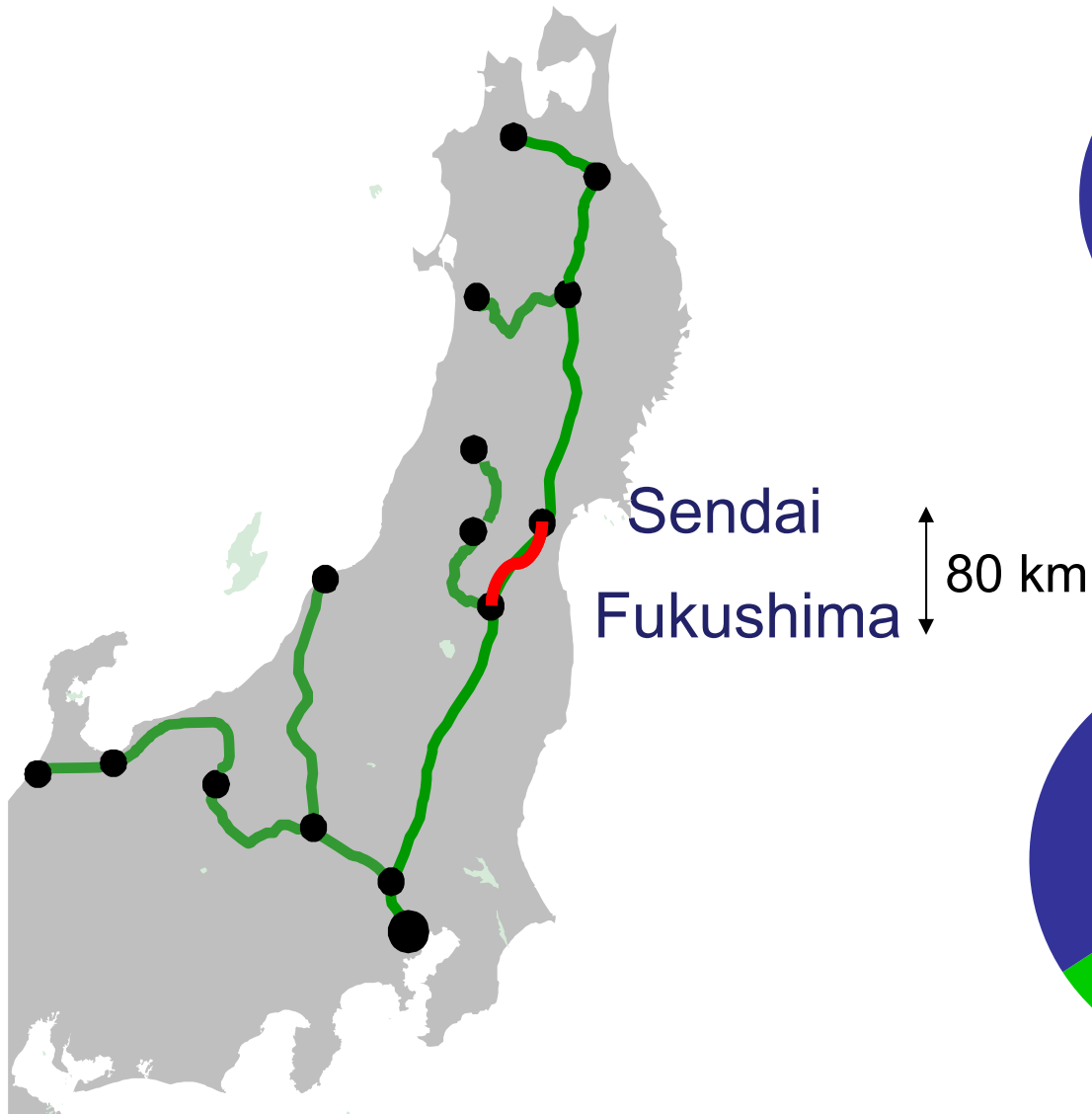
## 2 Competitive situation around us

### 1 HSR vs Air

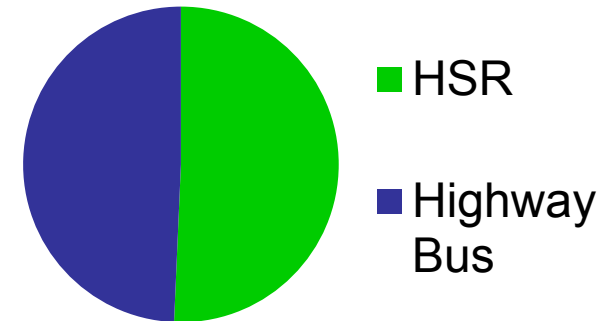


## 2 Competitive situation around us

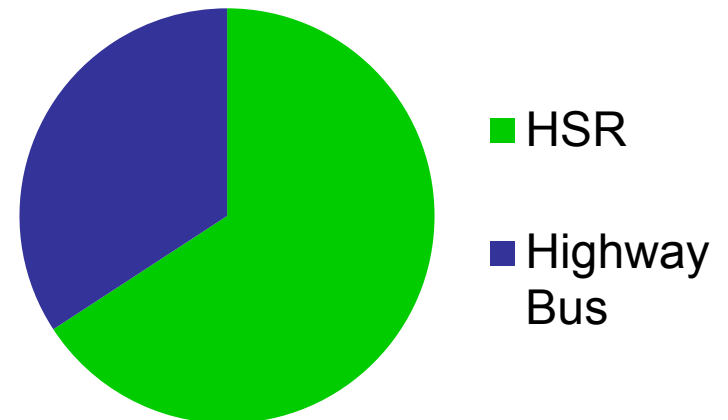
### 2 HSR vs Highway Bus



2010



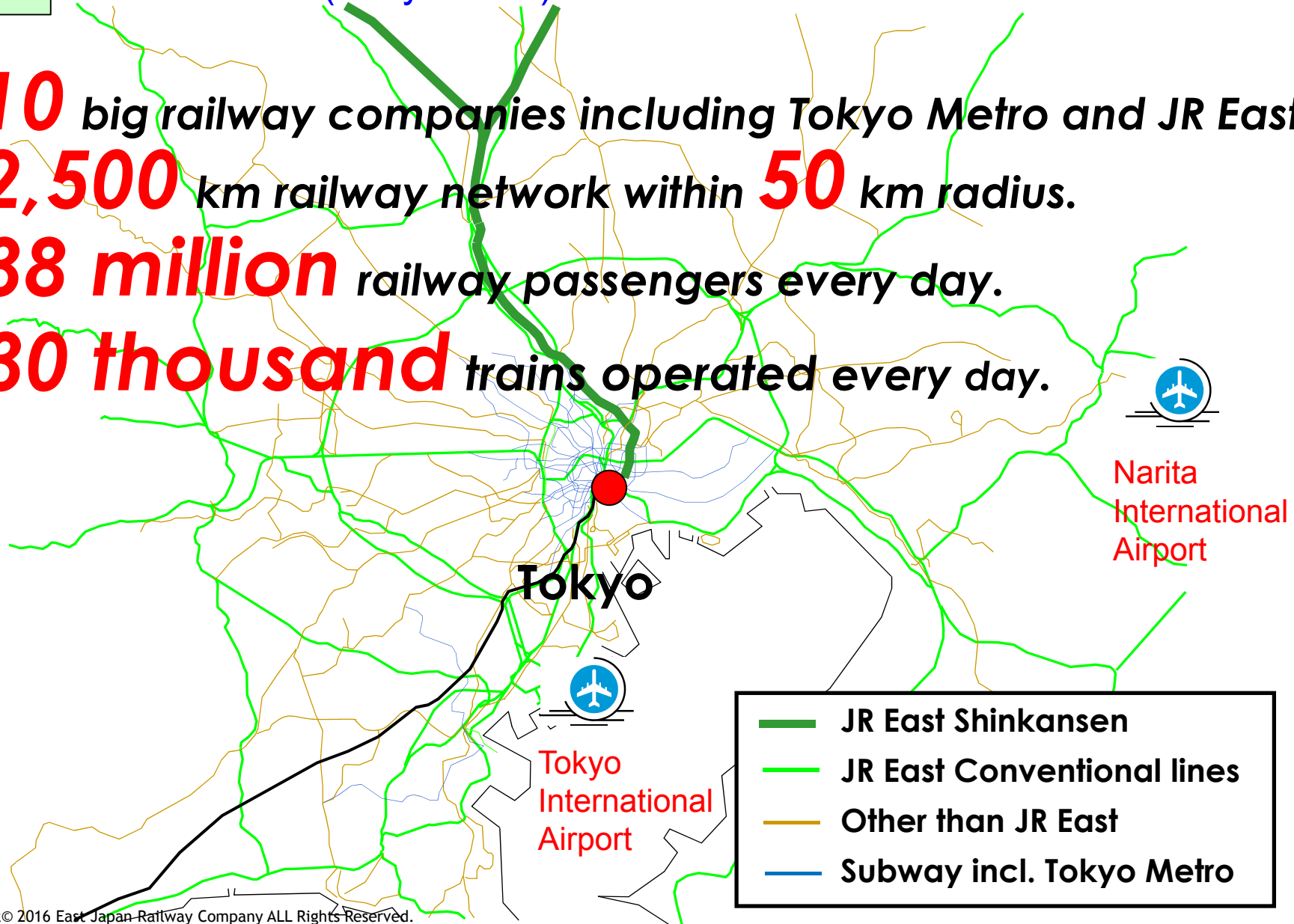
2015



## 2 Competitive situation around us

### 3 Urban Transit (Tokyo CBD)

- ▶ **10** big railway companies including Tokyo Metro and JR East.
- ▶ **2,500** km railway network within **50** km radius.
- ▶ **38 million** railway passengers every day.
- ▶ **30 thousand** trains operated every day.



## 2 Competitive situation around us

### 3 Urban Transit (Tokyo CBD)

#### *Rail data comparison*

Cities	Singapore (SIN)	Hong Kong (HKG)	Tokyo CBD (TKY)	Seoul (SEL)
Land area (km2)	716	1,104	623	605
Population (millions)	5.4	7.2	9.1	10.4

#### Ridership per day (million)

(MRT+LRT) (MTR+Tram) (Metro only)  
**SIN 2.8 HKG 5.1 SEL 7.0**

**TKY 23.5**

HIGH

#### Track density (km/km2)

(MTR+Tram) (MRT+LRT)  
**HKG 0.22 SIN 0.25**

(Metro+Korail)  
**SEL 0.72 TKY 1.18**

HIGH

#### Station density (/km2)

(MRT+LRT)(MTR+Tram) (Metro only)  
**SIN 0.20 HKG 0.25 SEL 0.50**

**TKY 0.96**

HIGH

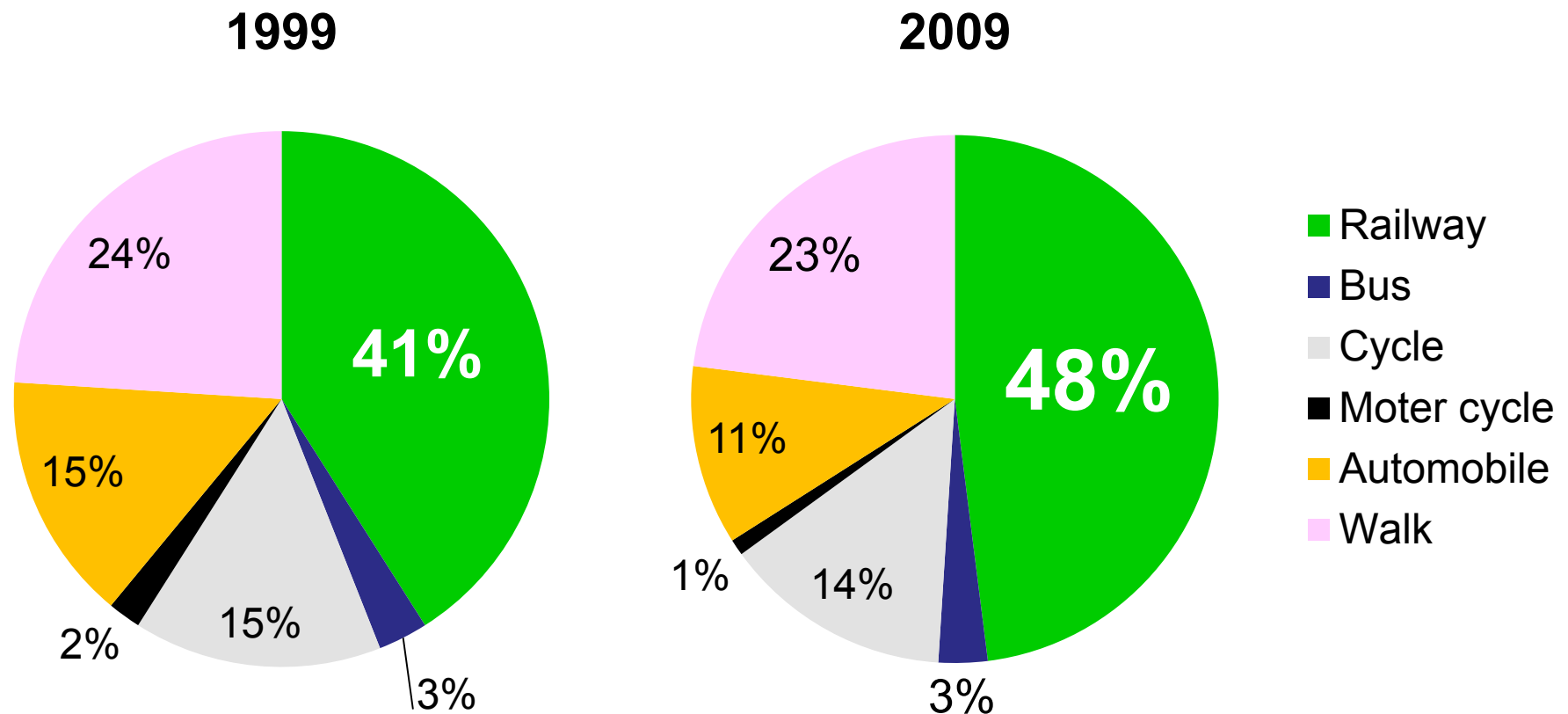
#### (Sources)

- Tokyo CBD: JR East, Private Railways, Monorail and Trams 東京都統計・都市交通年報
- Seoul: "Transportation Statistics (as of September 2013, Seoul Metropolitan Government)"
- Hong Kong: "Monthly Traffic and Transport Digest (Jan2014), Company data of HK MTR
- Singapore: "LTA Statistics in Brief 2014"

## 2 Competitive situation around us

### 3 Urban Transit (Tokyo CBD)

#### All the day

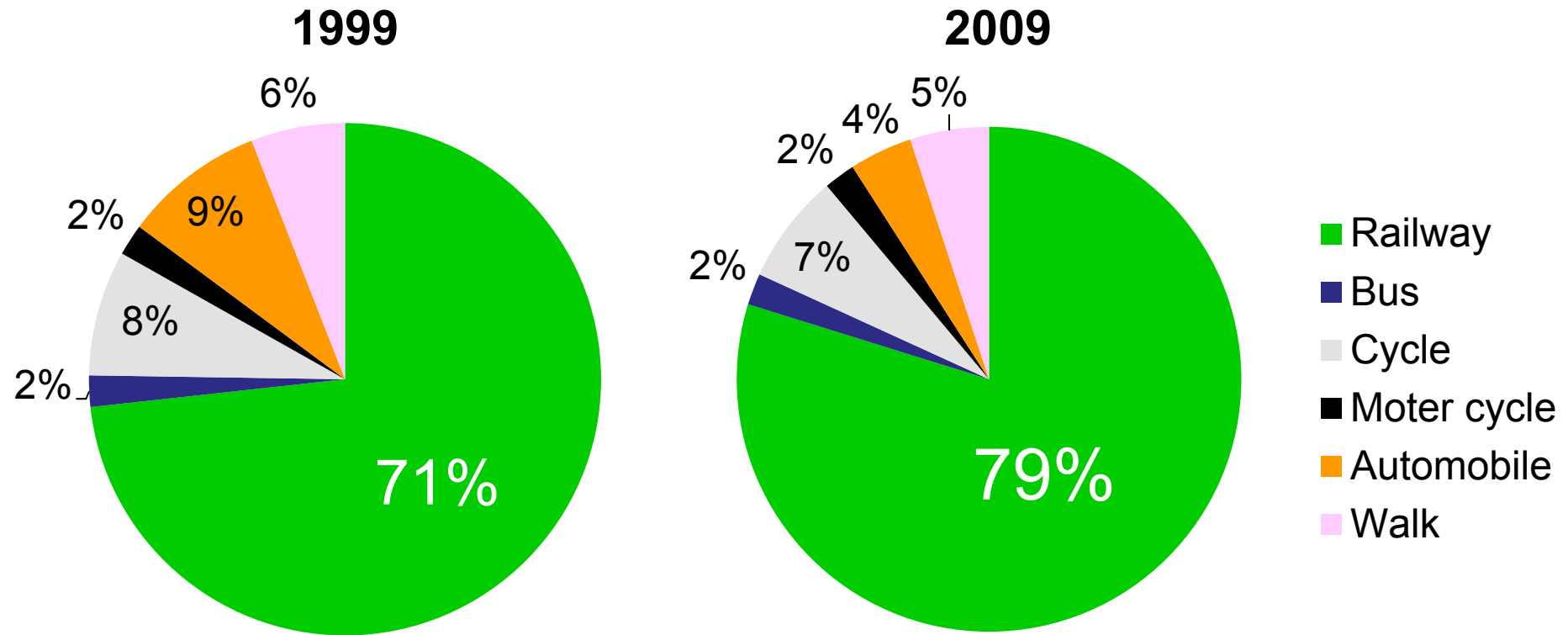


Person Trip Survey

## 2 Competitive situation around us

### 3 Urban Transit (Tokyo CBD)

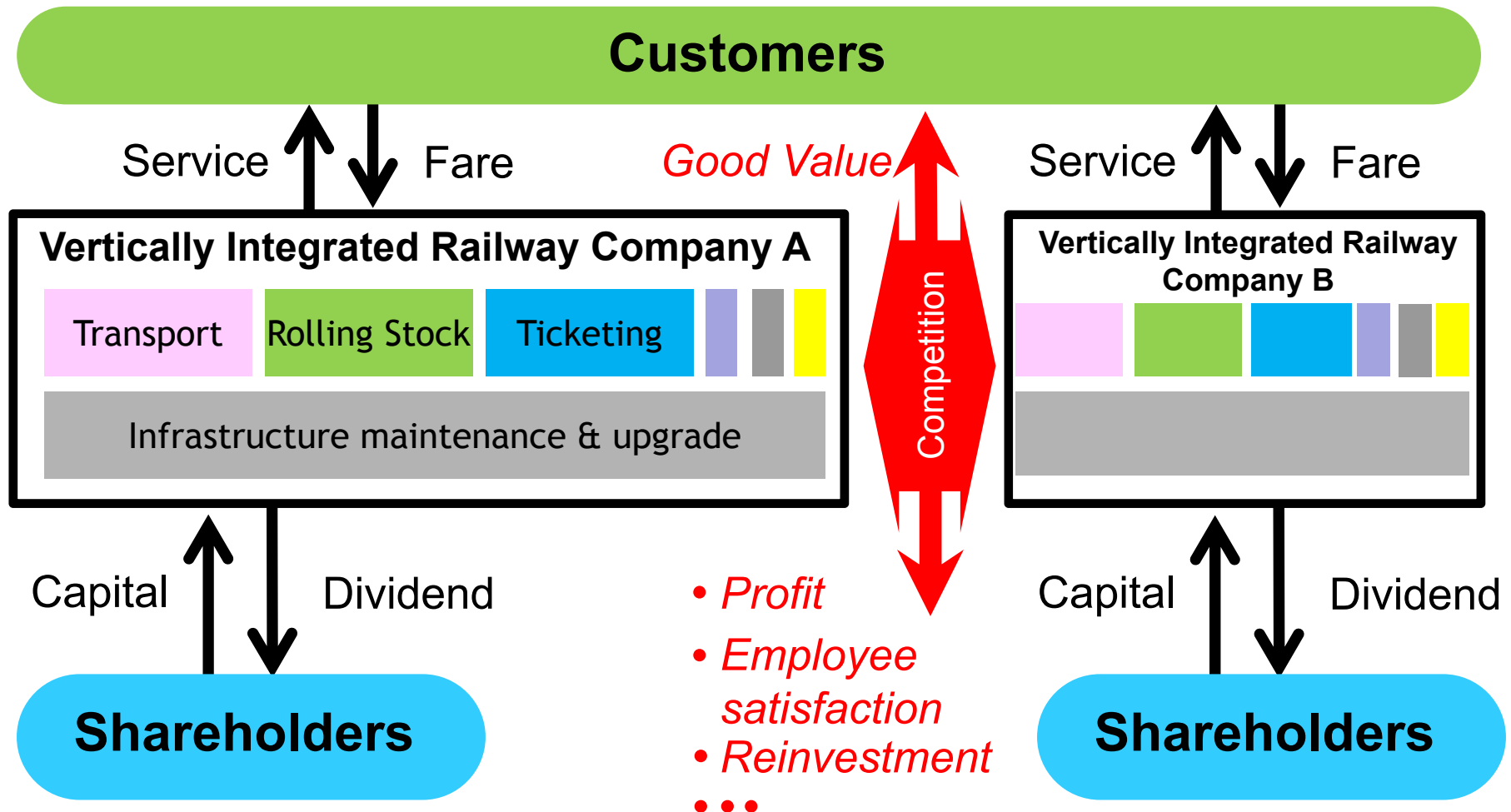
#### Commuter



Person Trip Survey

## 2 Competitive situation around us

### 3 Urban Transit (Tokyo CBD)



**Private vertically integrated railway companies maximize profit under competitions with each other.**

## 2 Competition with new mobility solution

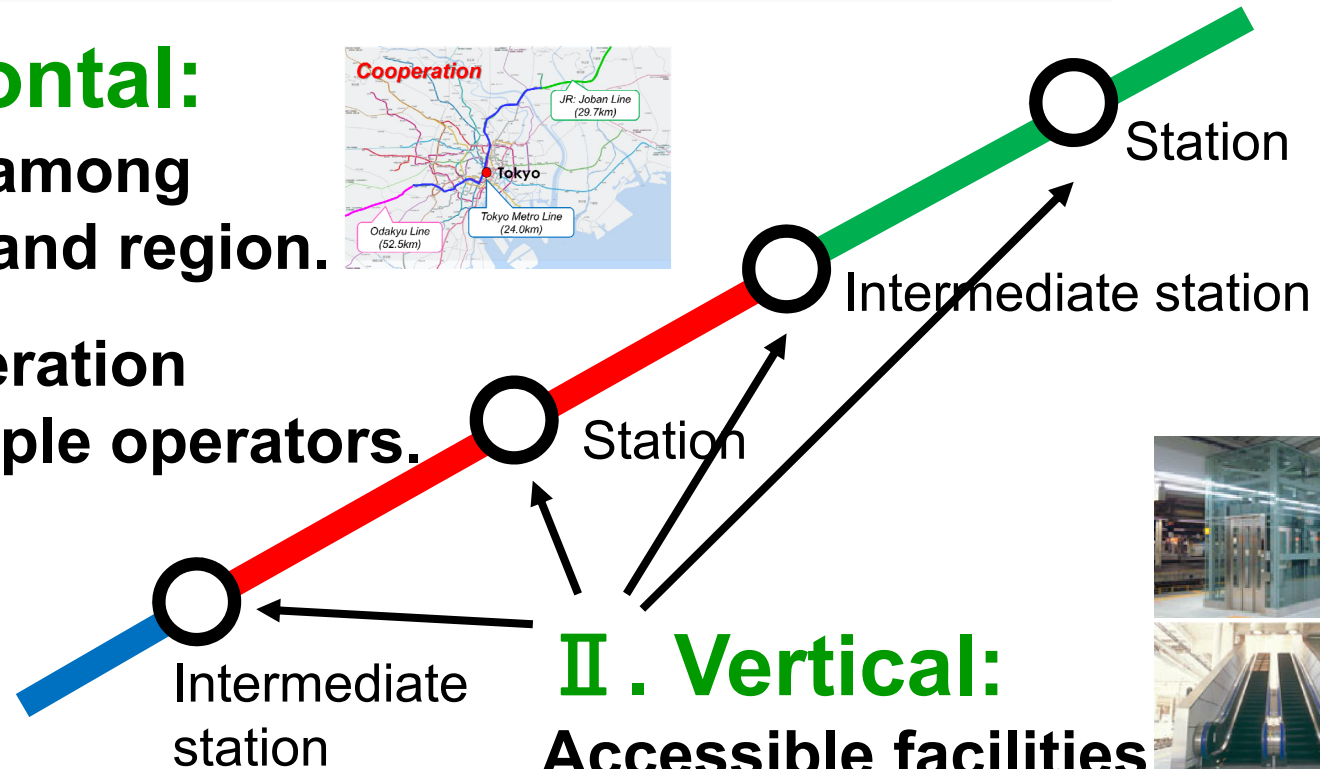
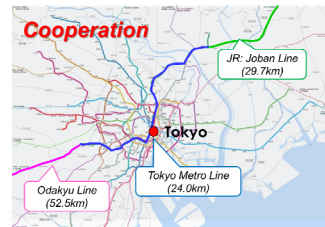
### 3 Urban Transit (Tokyo CBD)

## 3D smooth railway structure

### I . Horizontal:

**Direct links among airport, city and region.**

**Through operation among multiple operators.**



### II . Vertical:

**Accessible facilities**  
(elevators, escalators, etc.)



### III . Psychological:

**IC card at the stations and on board**

(tickets and micropayment by a single plastic card or an IC-chip-embedded mobile phone)





## 2 Competition with new mobility solution

### 4 Competition with new mobility solution

#### ◆ Transportation network company



Some of them are present but are not widespread

#### ◆ Long-distance ride-sharing



Some of them are present but are not widespread

#### ◆ Car Sharing



The number of

<b>Car Station:</b>	<b>10,810</b>	(14% up from the previous year)
<b>Car:</b>	<b>19,717</b>	(20% up from the previous year )
<b>Member:</b>	<b>846,240</b>	(24% up from the previous year )

### **3 The vision for the future railway**



### 3 The vision for the future railway

Joseph Schumpeter says

We are dealing with an evolutionary process

#### Innovation

Innovation creates a market power which enables the innovator to earn a monopoly profit.

But the innovator's monopoly position is only temporary.

#### Imitation

As soon as an innovator is made , imitation begins.

#### Creative Destruction

Incessantly destroying the old one , incessantly creation a new one.

### 3 The vision for the future railway

## Innovation Concept of Railway

### ① Innovate itself



*Safety,  
Efficiency, ...*



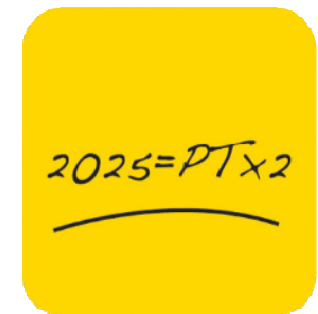
### ② Innovate the way of life

*The higher mobility of people,  
The better quality of life*



### ③ Innovate society (Social Innovation)

*Economic Growth,  
Reduction of congestion, ...*



**GROW** with  
PUBLIC TRANSPORT

### 3 The vision for the future railway

## Railway and New mobility solution

### ① Railway Innovation



*Customer oriented system  
Entrepreneurship  
Business mind  
Automatic driving, On-demand, Sharing*

### ② Intermodal cooperation among conventional PTs



*Door to door, Shorting Total Trip Time  
(competitiveness with new mobility solution)*

### ③ Integration with new mobility solution

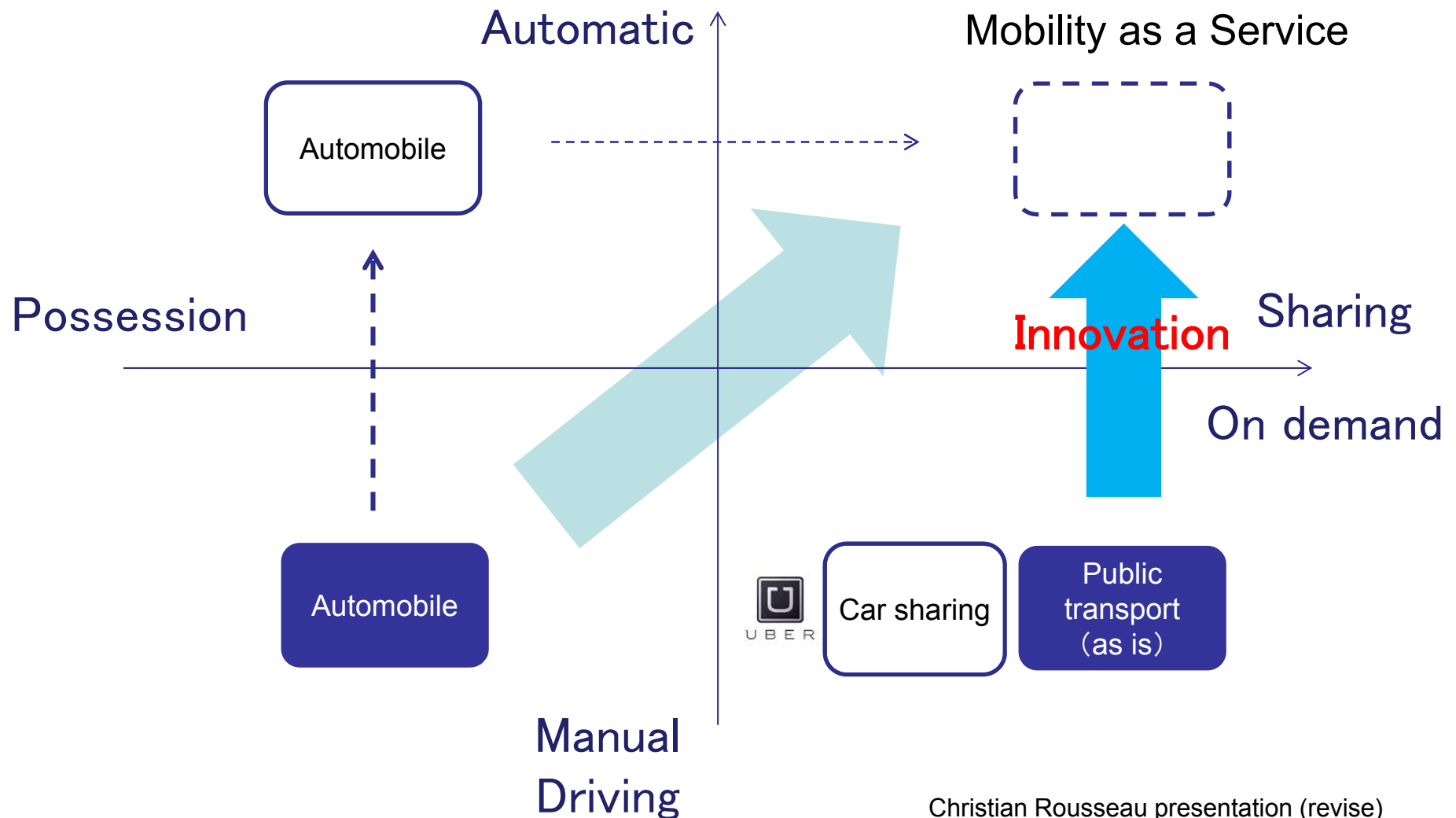


*Mass transit: Rail, Bus, ...  
First/Last 1 Mile: Personal/Sharing mobility*

### 3 The vision for the future railway

#### ① Railway Innovation

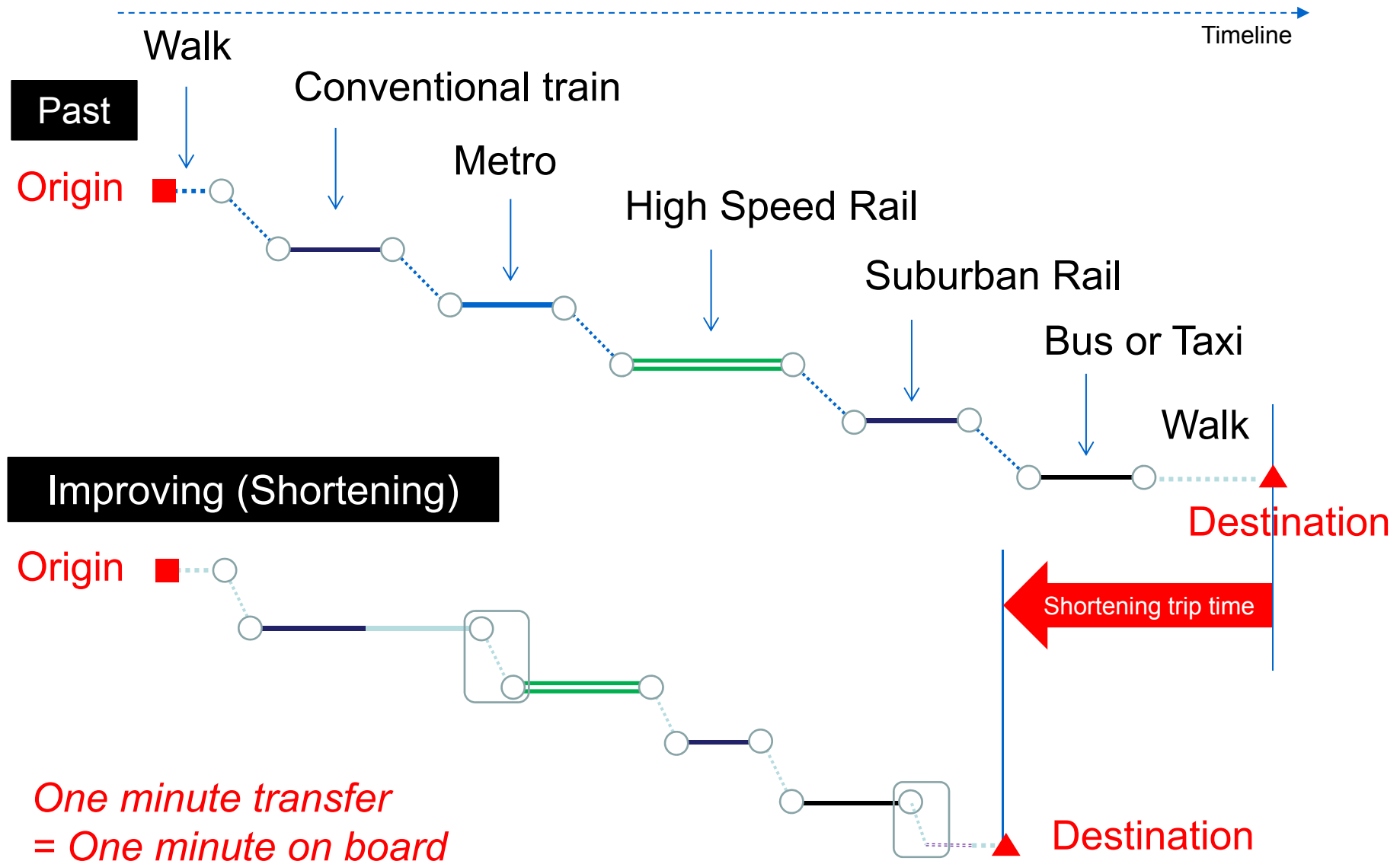
Railway should innovate by itself.



### 3 The vision for the future railway

#### ② Intermodal cooperation among conventional PTs

##### STTT Model



### 3 The vision for the future railway

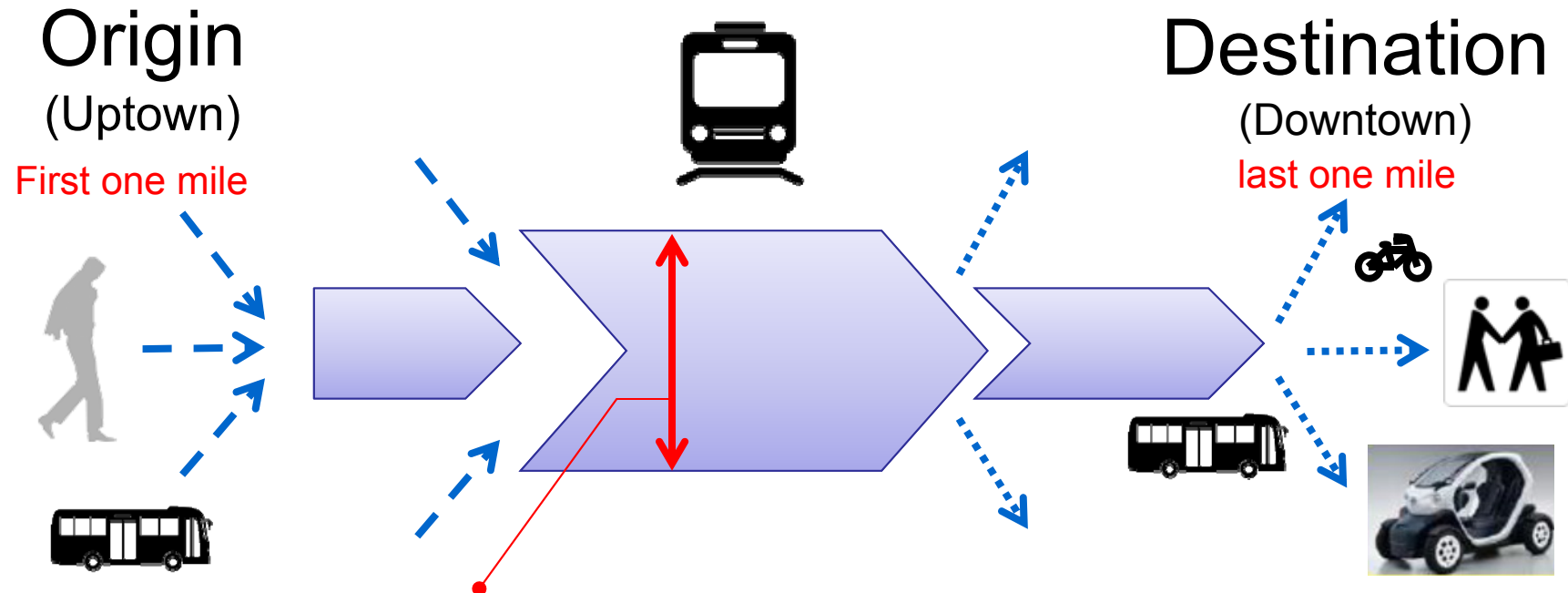
#### STTT Technological Attributes (practical example)





### 3 The vision for the future railway

#### ③ Integration with new mobility solution



**The capacity for traffic volume  
determines the means of transport**

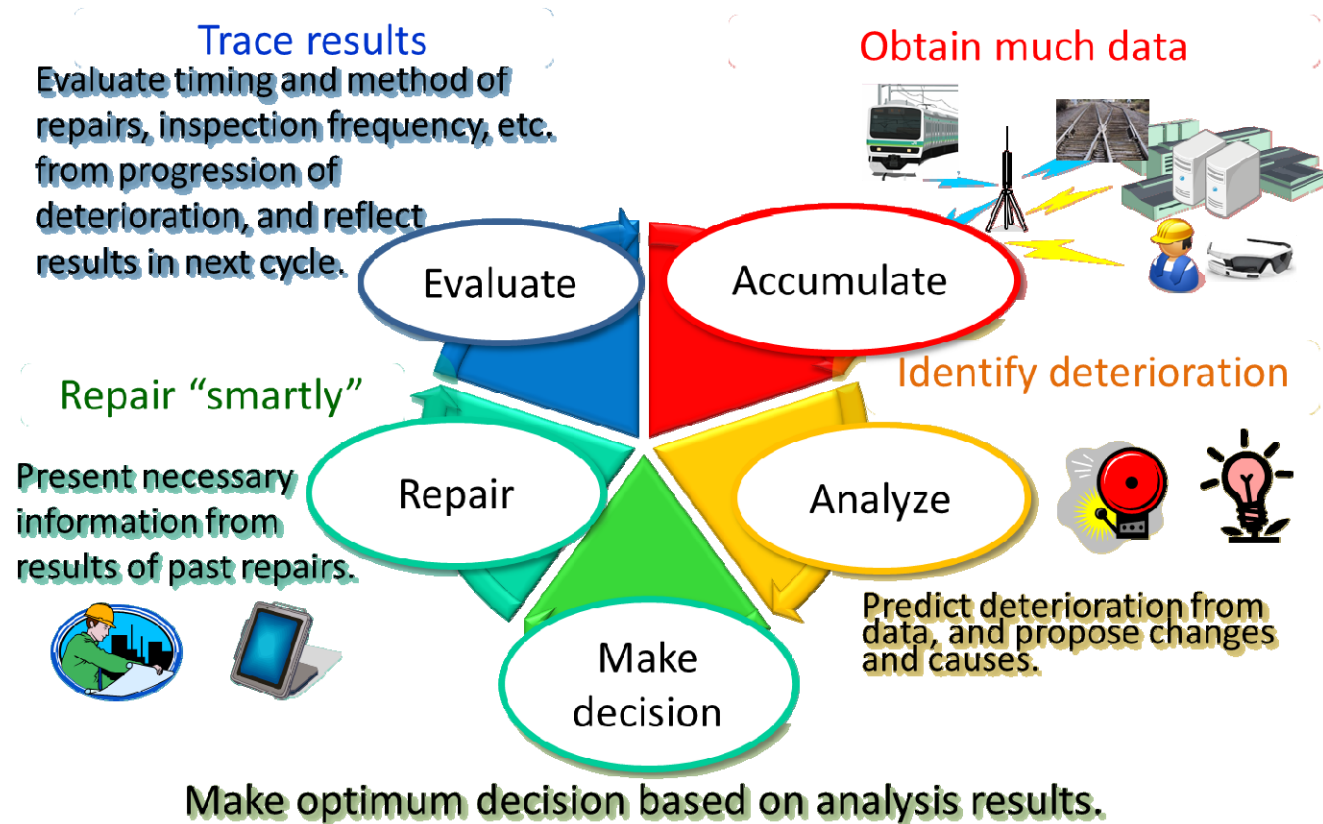
Maximum transport capacity per 1 direction, 1 hour

automobile	bus	LRT	monorail	Mini metro	Heavy rail (incl. Metro)
1,000	2,500	11,000	21,000	35,000	64,000

## 4 【Q&A】 The perspective of R & D

### “SMART MAINTENANCE” BY CBM

We established the CBM cycle based on the field data,



## 4 【Q&A】 R & D for Commercial Operations under High Speed

### ■ Improvement of On-board Facilities

#### Enhanced Environmental Performance

Long-nose-shaped end cars to reduce micro-pressure waves in tunnels



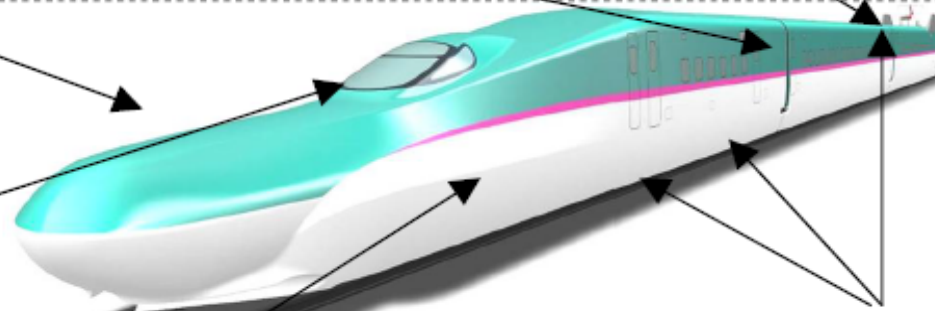
Bogie covers/Smooth covers between cars



Low noise pantographs



Pantograph noise insulation panels

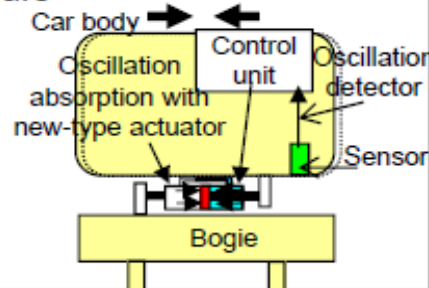


Enhancement of Safety: Train Information Control System

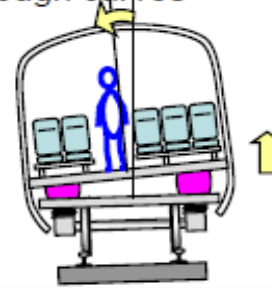


#### Enhanced Passenger Riding Comfort

Improved passenger riding comfort with new-type full active suspension for all cars



Car body tilting system to improve riding comfort through curves

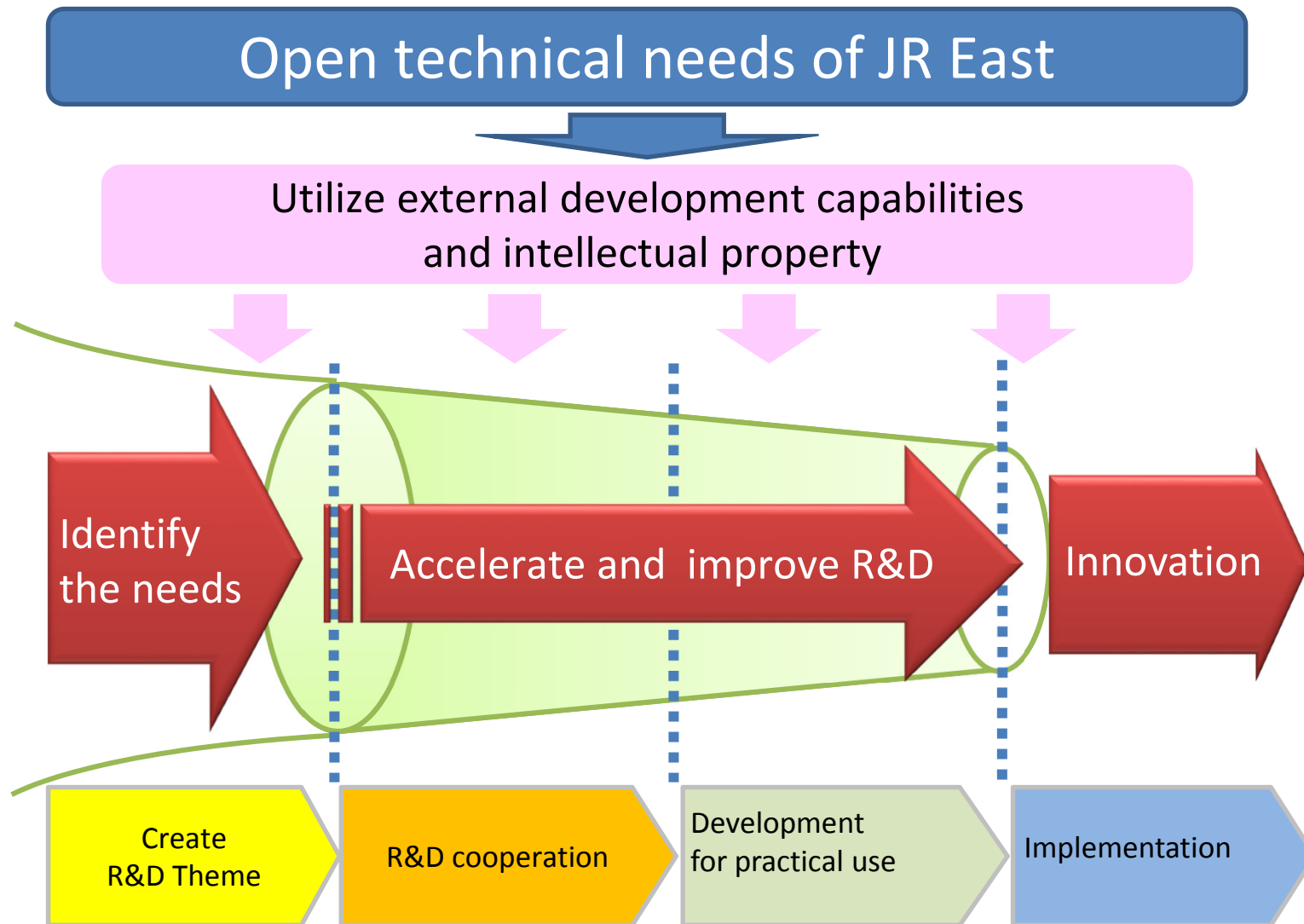


Improved Running Performance & Assurance of Reliability

- Pantograph
- Main circuit system
- Brake system



## 4 【Q&A】 Open Innovation of R&D Section



## European contact for R&D with suppliers

For companies who have their interests in R&D joint projects, please make contact with JR East Brussels Branch.

Contact: Kenji Murasaki (Mr.)

Head of Technical affairs, JR East Brussels Branch

Tel: 32 (0) 2 808 3643 Fax: 32 (0) 2 808 3649

Email: [infojrebru@japanrail.be](mailto:infojrebru@japanrail.be) or [murasaki@japanrail.be](mailto:murasaki@japanrail.be)

We are open for Innovation anytime.



# VERTICAL STRUCTURE

We own all the infrastructure of railway, operate and maintain as full integration railway model.



Life-style business



IT Suica

## Diversification



Railcar manufacturing



Overseas business



Stations



Trains

## Operation Various transport modes



Buses



Monorail



Tracks



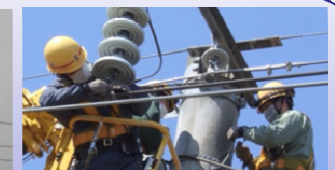
Rolling stock

## Maintenance

Infrastructure  
Rolling Stock



Signals



Electric power supply



## Ownership infrastructure



## FACILITIES

We have to maintain various & huge facilities to provide Safety & Stability service.



## OPERATIONS

By the well-maintained facilities and well-trained employee, we daily operate 13000 trains safety and stably.



Train mileage :  
441 thousand mile



RC operation :  
700 thousand times



Checking Signal :  
1.2 million times



Train Door Operation :  
6 million doors

**day**