



Introduction of JR East Experiences : How to Maximize Economic and Social Benefits of High-Speed Rail

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East Japan Railway Company**

- 1 Outline of JR East and HSR Network
- 2 Maximization of HSR Impact
- 3 Benefits of HSR Related Development
- 4 Summary



1 Outline of JR East and HSR Network

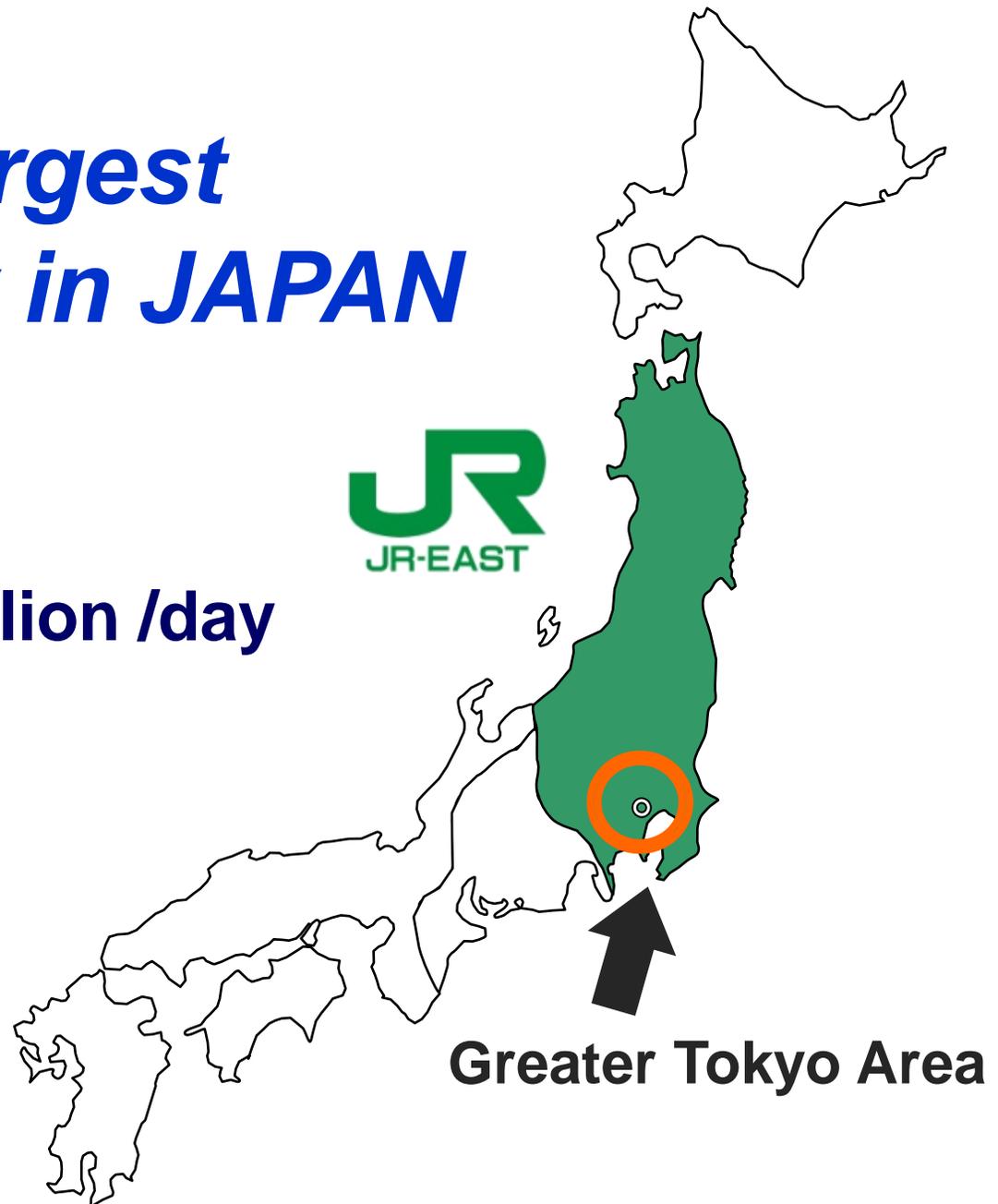
Outline of JR East

***JR EAST is the largest
railroad company in JAPAN***

Network: 4,668 miles

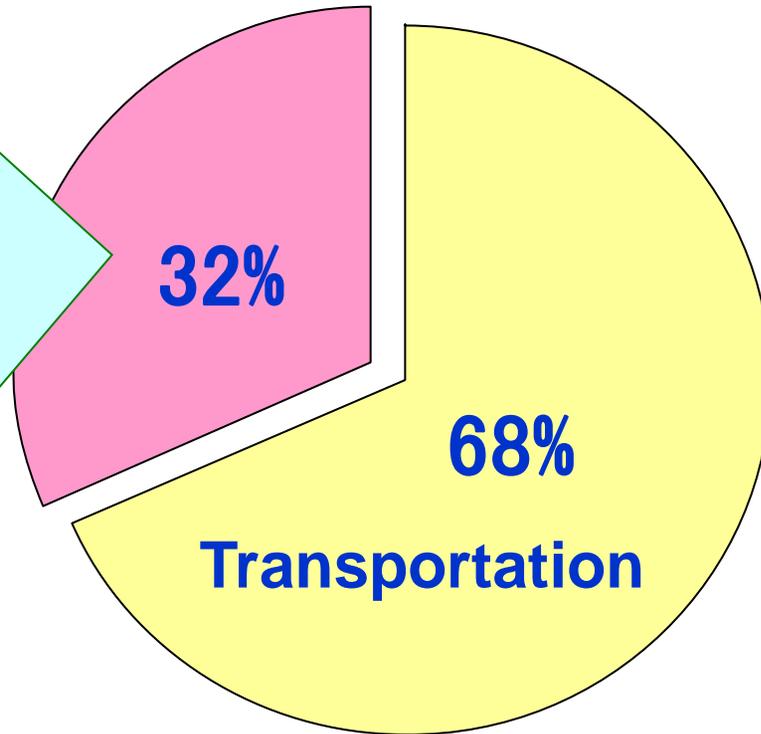
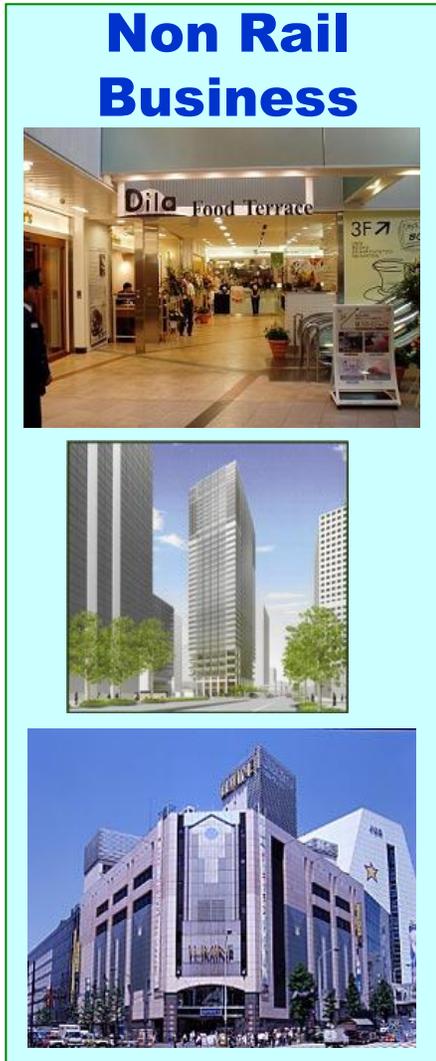
No. of Passengers: 17 million /day

No. of Trains: 13,000 /day

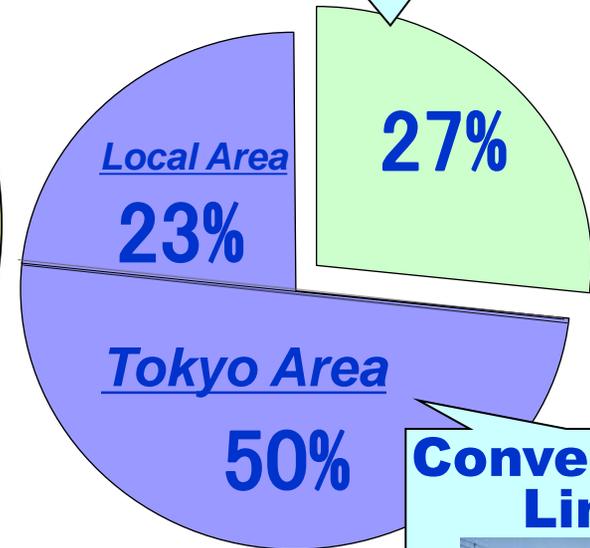


*Numbers are as of FY ended March 31 , 2010

JR East Revenues



**JR EAST
Group Total
\$ 29 billion**



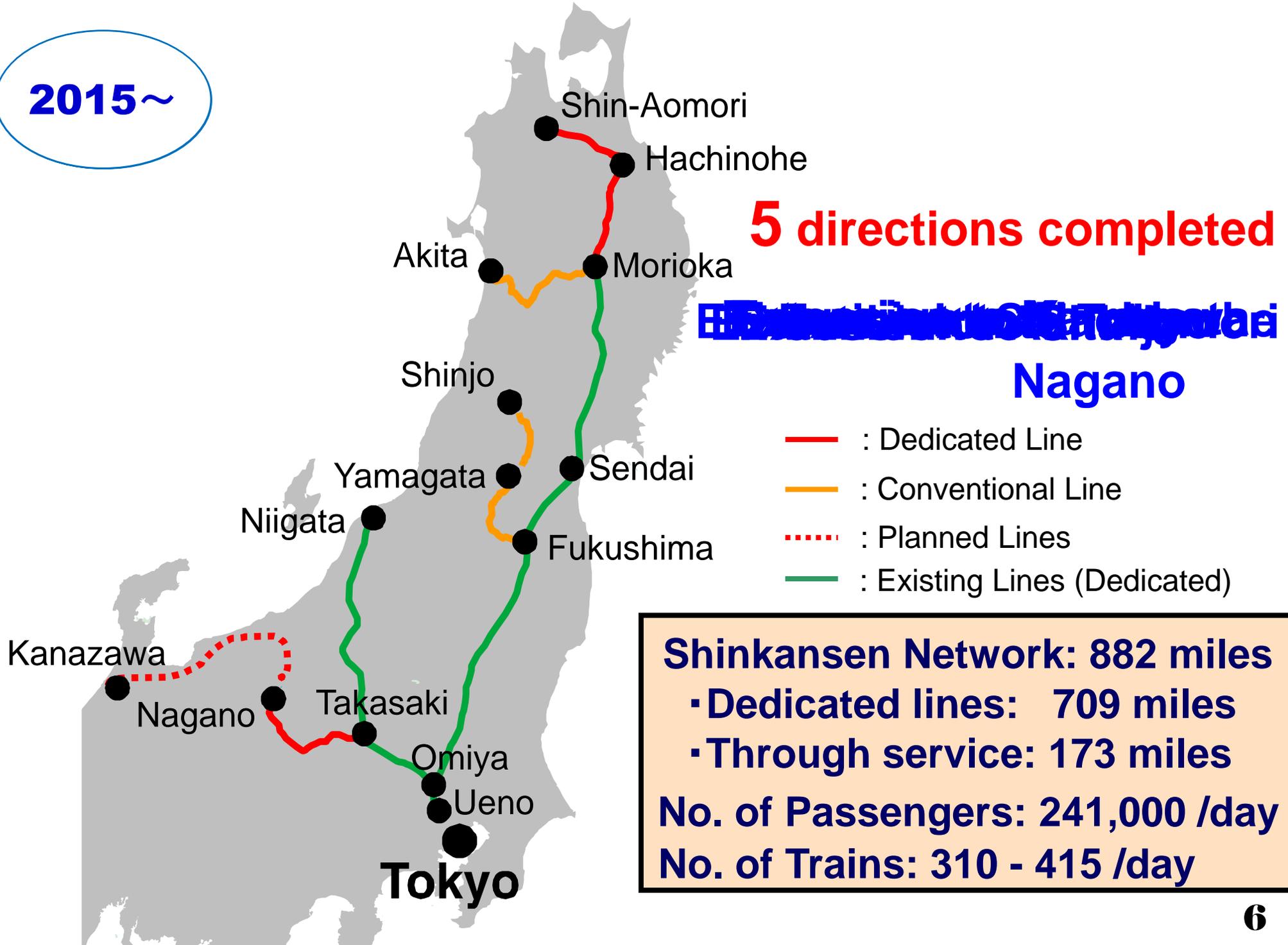
Rail Revenues

\$ 18 billion

2009.4 - 2010.3

Shinkansen Network

2015~



Characteristics of Shinkansen [1]

Three types of Shinkansen

High speed

For longer trips



Series E2 170mph ★



Series E5 200mph★

Hybrid type

*For through service
with coupling/uncoupling
functions*



Series E3 170 mph ★



Series E6 200mph ★

Large capacity

For commuting



Series E1 150mph



Series E4 150mph ★

Characteristics of Shinkansen [2]

High-speed operation

Max. test speed : 225mph
Max. commercial speed : 200 mph

High-density mass transport

15 trains per hour
Max. of 1,600 passengers

Safety

No. of passenger fatalities: 0 since 1964
Disaster countermeasures (snow, earthquake)

Reliability

Train delay time:
0.3 min.
Average of all trains per year

Eco-friendliness

Less CO² emissions

Characteristics of Shinkansen [3]

Comfort

**No Ticket verification in cabin
Gran Class**

**Reduce ticket
purchase time**

**Mobile phone Suica
(Non-contact IC chip installed)**

Profitability

**Shinkansen Revenue
\$ 4.9 billion (2009.4 - 2010.3)
No subsidy**

2 Maximization of HSR Impact

(1) High Speed

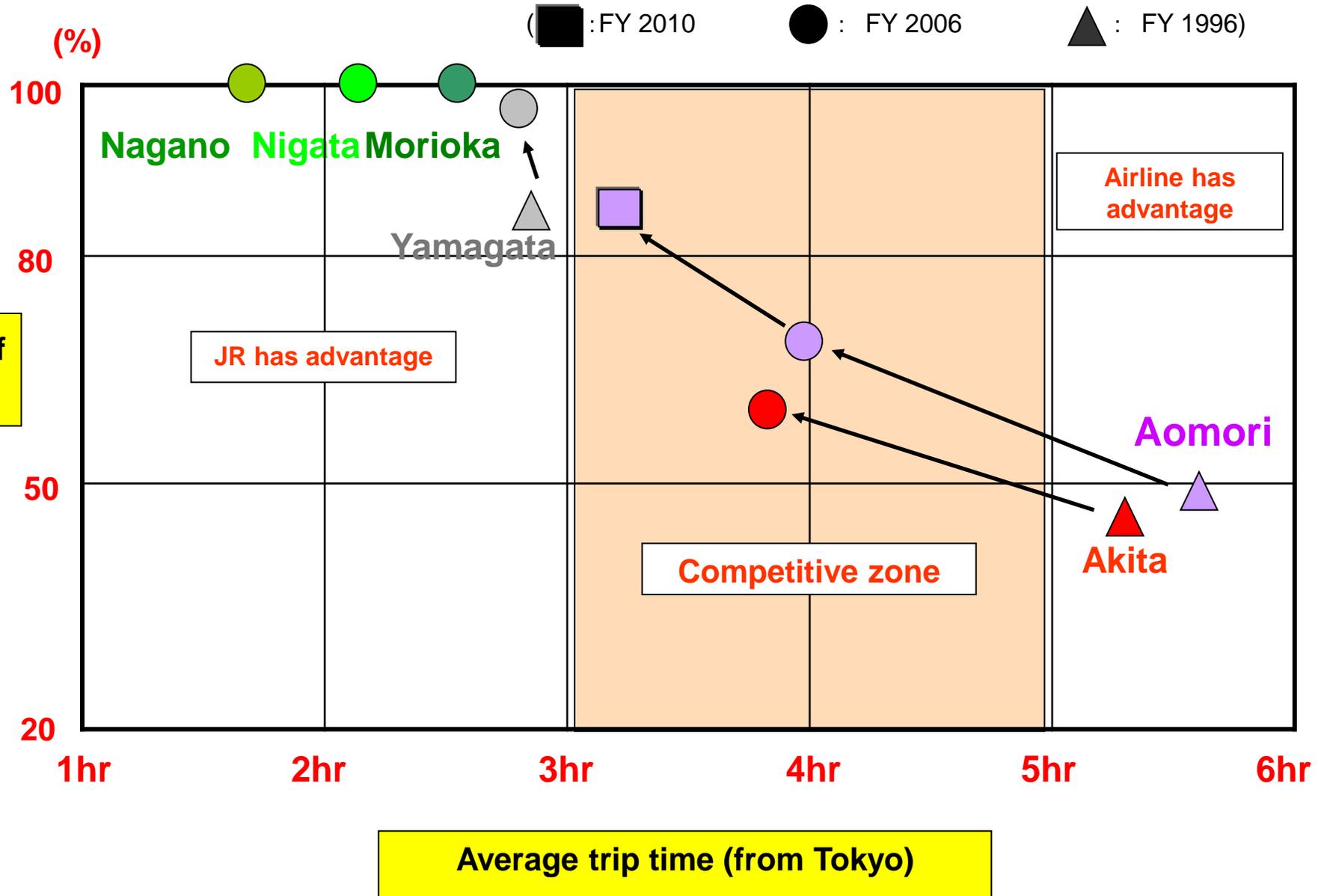
(2) Through Service

(3) Shinkansen Commuters

(4) Shorten total trip time

High Speed Increases Ridership

Comparison of JR and Airline Shares between Tokyo and Major Cities



2 Maximization of HSR Impact

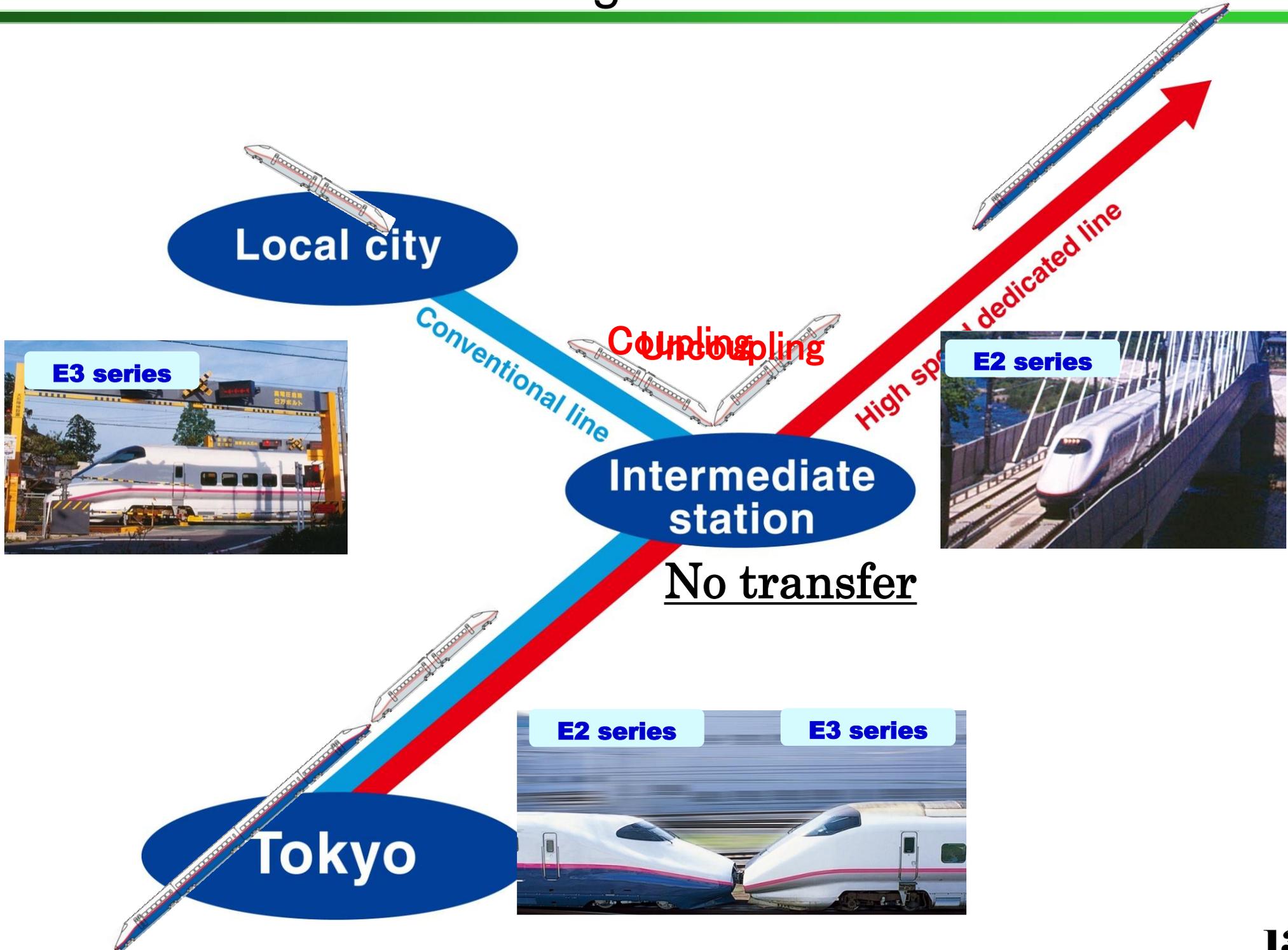
(1) High Speed

(2) Through Service

(3) Shinkansen Commuters

(4) Shorten total trip time

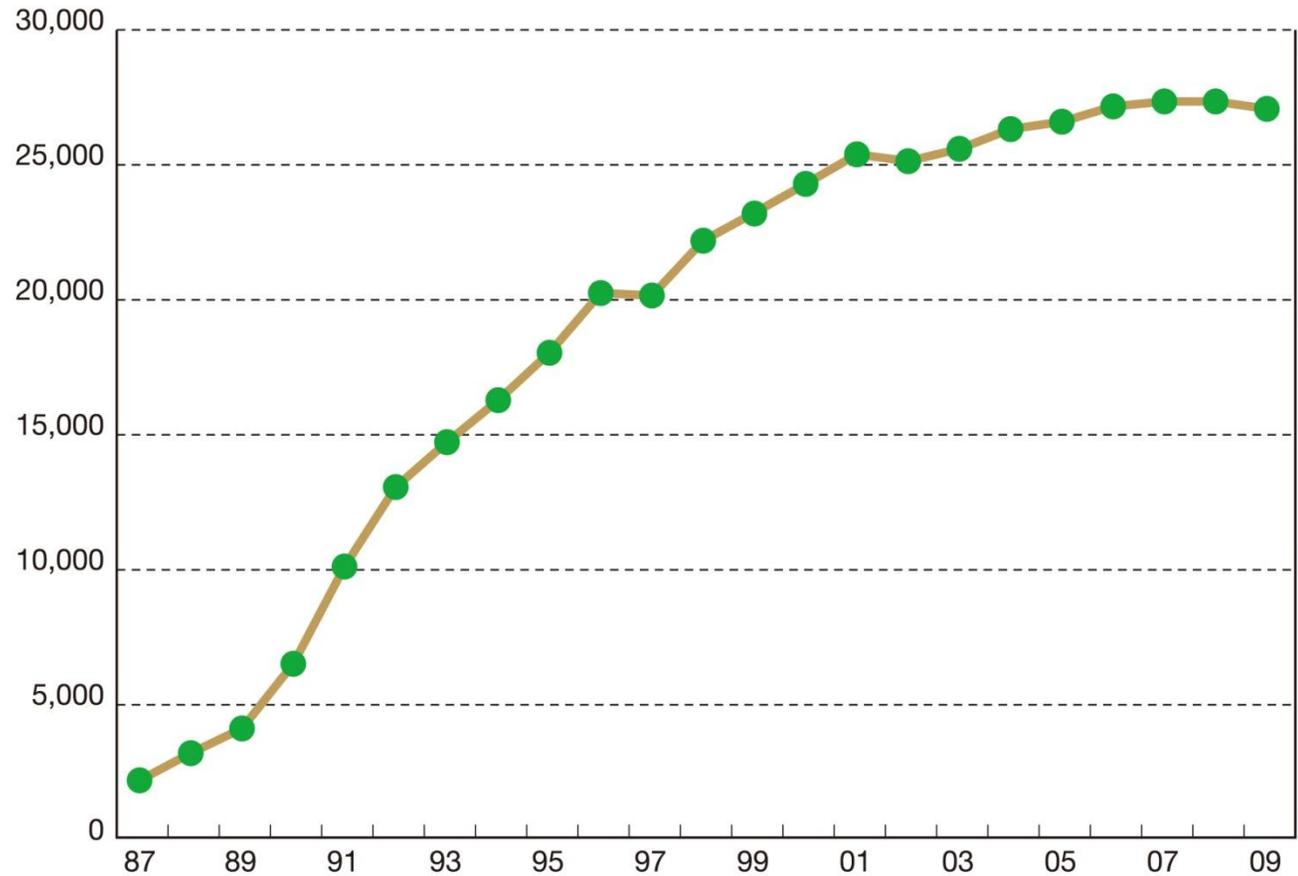
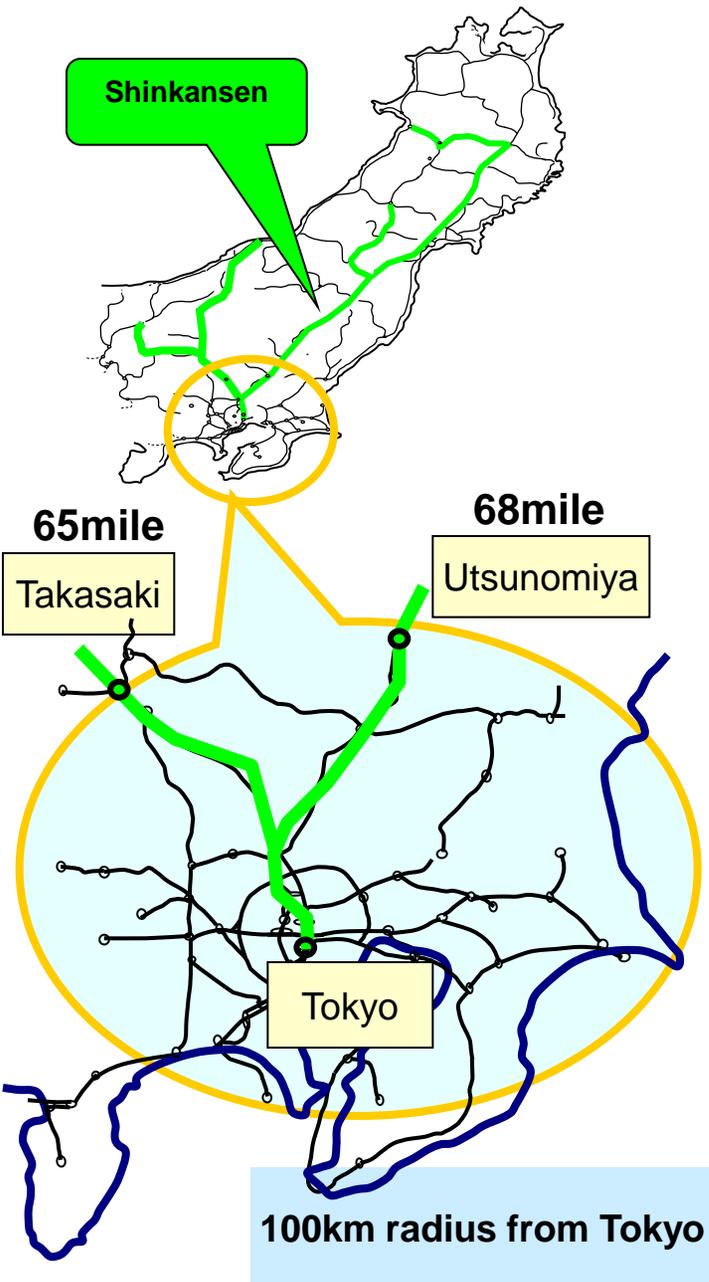
Through service



2 Maximization of HSR Impact

- (1) High Speed
- (2) Through Service
- (3) Shinkansen Commuters**
- (4) Shorten total trip time

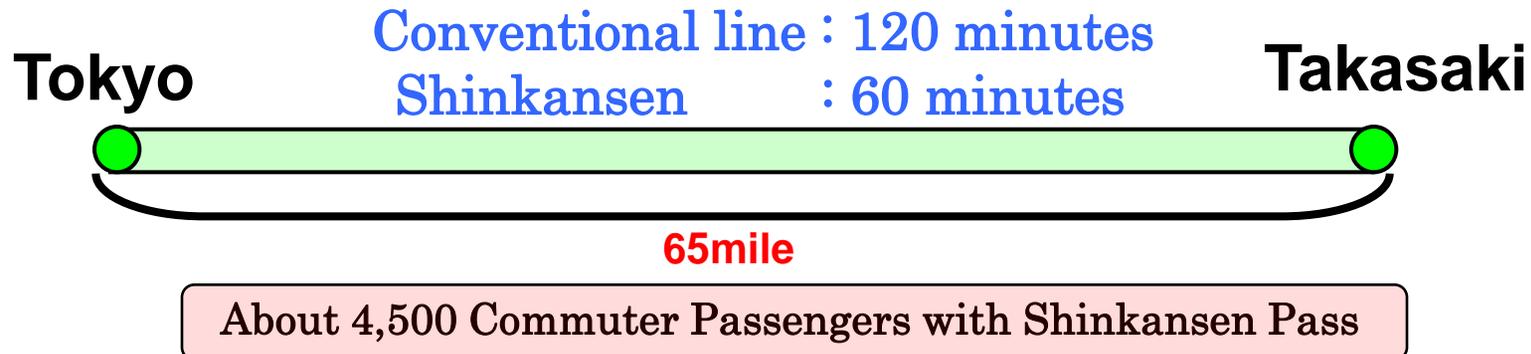
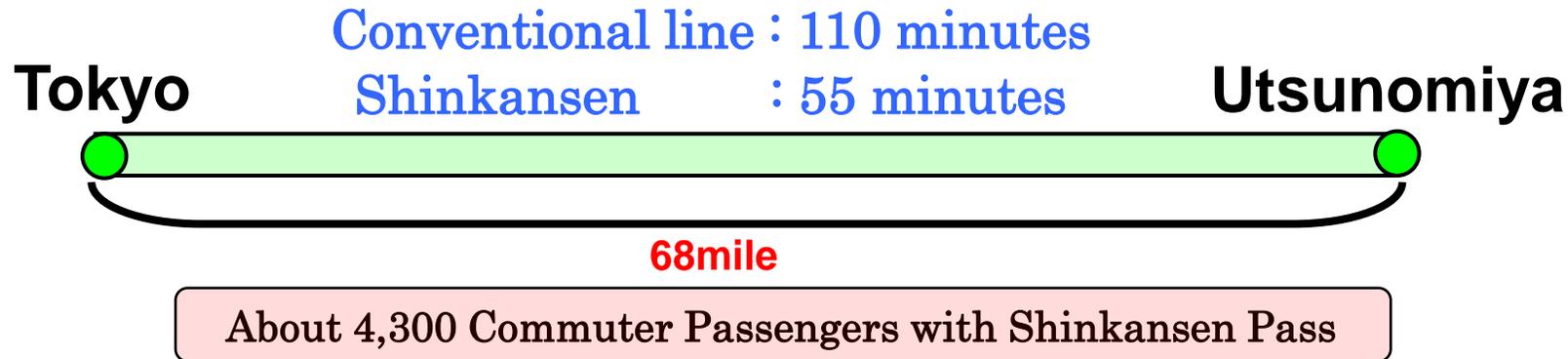
Shinkansen Commuter Transport [1]



No. of Shinkansen commuter pass holders

Shinkansen Commuter Transport [2]

Between 50 – 70 miles, many commuters use the Shinkansen.



Large Capacity Shinkansen



E4 Series

- 16-car train set = twin 8 double-deckers
- No. of seats: 1,634 seats
(the world's greatest for a high-speed train)



12 trains arrive at Tokyo Station between 8:00 and 9:00 AM.

2 Maximization of HSR Impact

- (1) High Speed
- (2) Through Service
- (3) Shinkansen Commuters
- (4) Shorten total trip time**

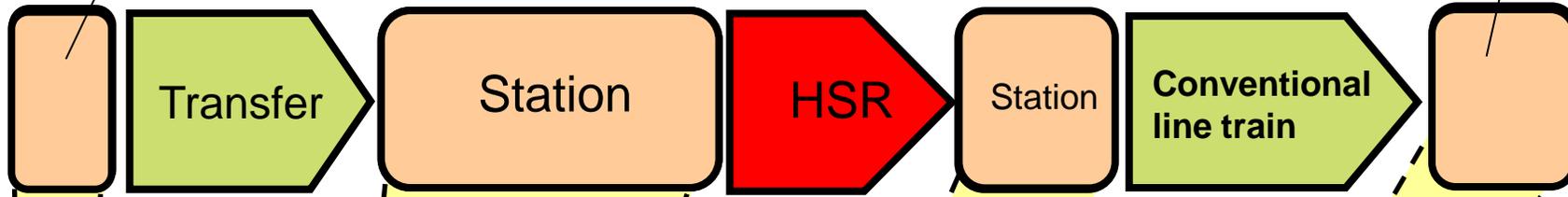
Shorten total trip time

Origin

Destination

Ticket Purchase

Last one mile



Reduce ticket purchase time

Shorten in-station time

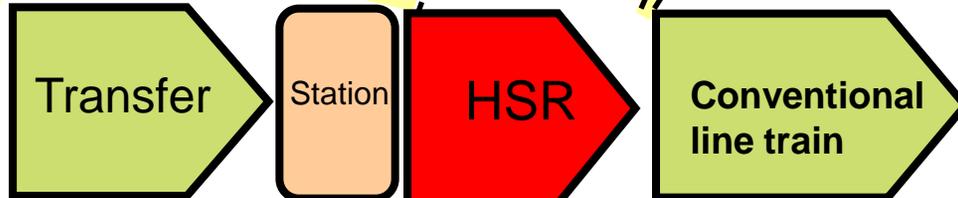
Eliminate train transfers

Park & Ride System



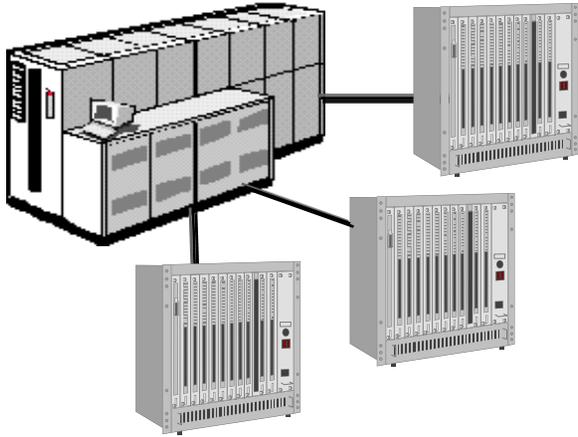
駅名	車番	発車時刻	到着時刻	乗車人数
ASAMA	529	15:04	NAGANO 23	8 Cars
Max TOKAI	143	15:08	SAWADA 20	15 Cars
Max TOKI	329	15:12	NIIGATA 22	8 Cars
NASUNO	261	15:20	KORIYAMA 22	10 Cars
TOKI	331	15:32	NIIGATA 20	10 Cars

・あらかじめ、みどりの窓口で指定席特急券をお買い求め下さい。



Reduce ticket purchase time

Ticketing System



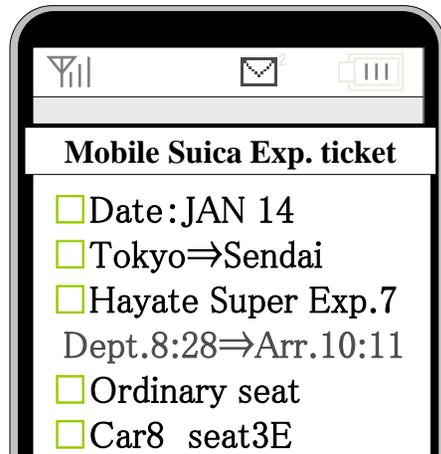
Station

Home, Office (Web site)

Anywhere (Mobile phone)

Quick Ticketing with Mobile Phone Suica

2006~



Processing speed: 0.2s



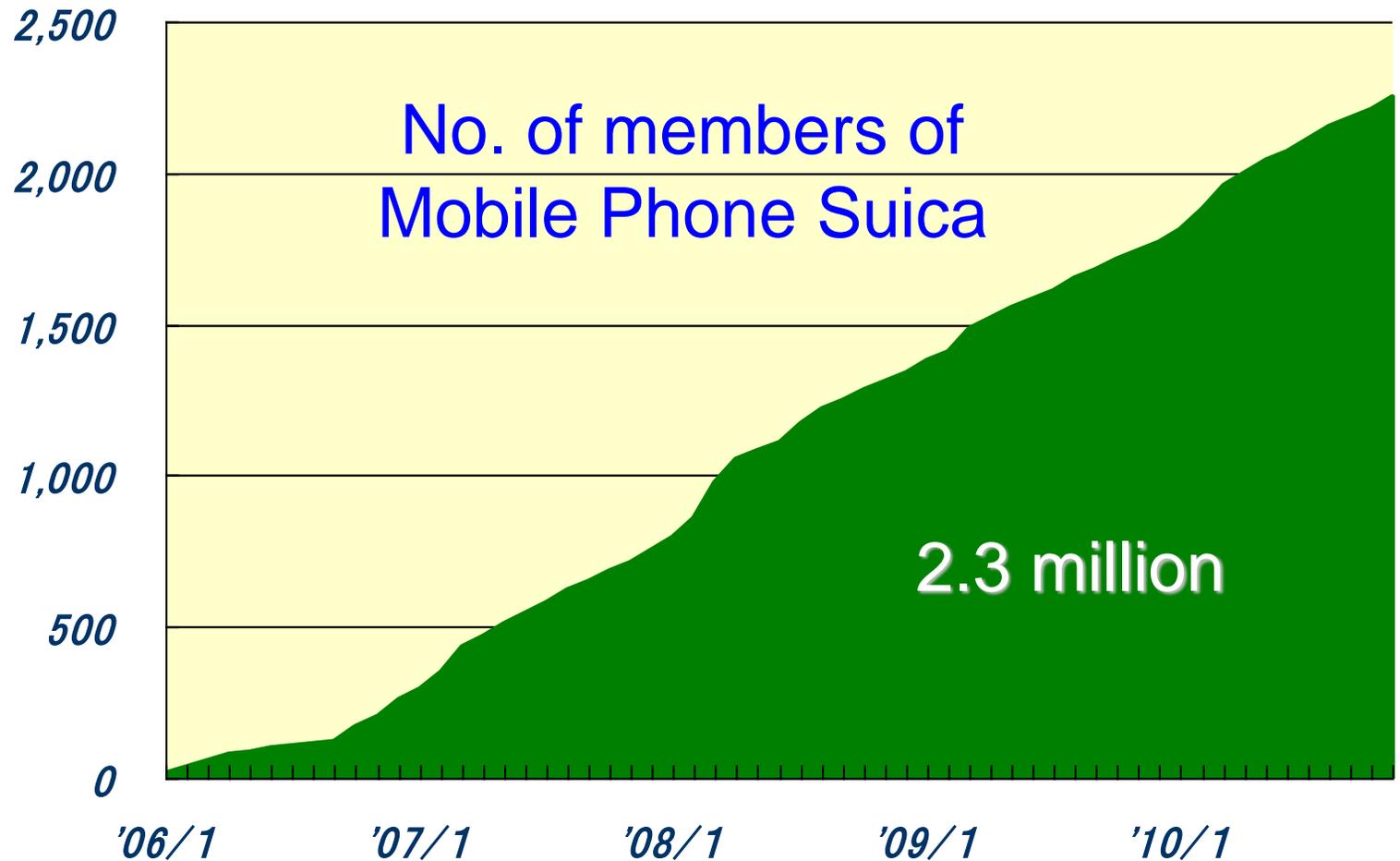
Reserve seat & purchase ticket
with your mobile phone

Data transferred to memory

Handset serves as ticket

Growth of Mobile Phone Suica

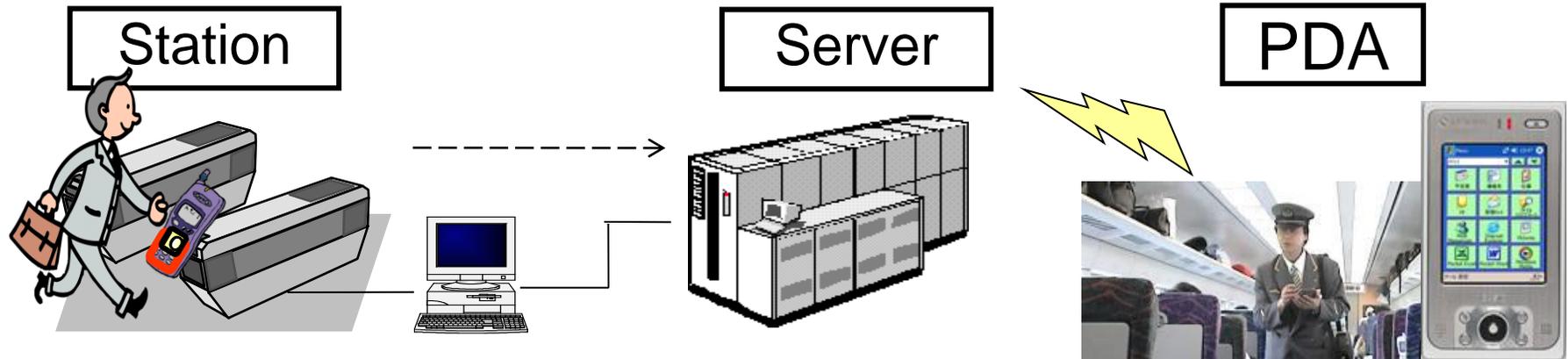
(thousands)



Suica and Pasma (mutual use) : 50 million

Comfort & Amenities

No Ticket verification in cabin



Comfort & Amenities



 GranClass

on the Series E5



Shorten In-station Time [1]

Conventional Line
Platform



Escalator



Concourse



10 min to Shinkansen departure



Shorten In-station Time [2]



Shorten In-station Time [3]



A close-up photograph of a train departure board. The board is black with white and colored text. It displays train names, numbers, times, destinations, tracks, and the number of cars. The board is titled "東北・山形・秋田・上越・長野新幹線" (Tohoku · Yamagata · Akita · Joetsu · Nagano Shinkansen). Below the title, there is a table of train information.

列車名 Train	番号 Train No.	時刻 Time	行先 Destination	番線 Track	記事 Remarks
ASAMA	529	15:04	NAGANO	23	8 Cars
Max YAMABIKO-TSUBASA	143	15:08	SENDAI YAMAGATA	20	15 Cars
Max TOKI	329	15:12	NIIGATA	22	8 Cars
NASUNO	261	15:20	KORIYAMA	22	10 Cars
TOKI	331	15:32	NIIGATA	20	10 Cars

あらかじめ、みどりの窓口で指定席特急券をお買い求め下さい。

Shorten In-station Time [4]

Shinkansen Gate

Escalator

Shinkansen Platform

5min to Shinkansen departure



Shorten In-station Time [5]

Shinkansen Gate

Escalator

Shinkansen Platform



Shorten In-station Time [6]

Shinkansen Gate

Escalator

Shinkansen Platform



Shorten In-station Time [7]

Passenger getting on

Train Leaving

2 min to Shinkansen departure



Shorten In-station Time [8]

Passenger
Getting ON

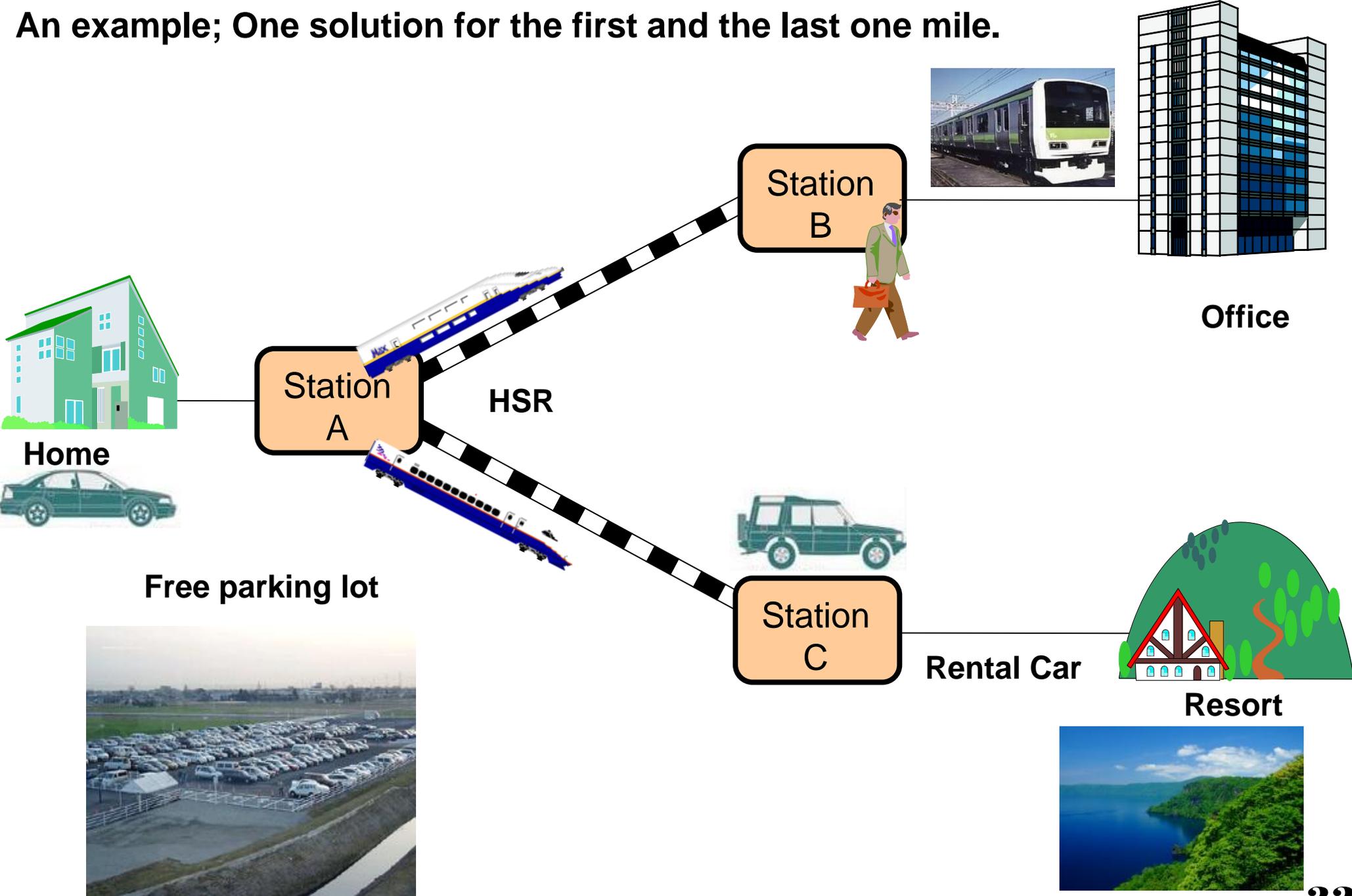
Train Leaving



- JR East bullet trains turnaround at Tokyo station in 12 minutes
- 400 trains pull in and out from the two platforms at Tokyo station

Park & Ride System

An example; One solution for the first and the last one mile.



3 Benefits of HSR Related Development

(1) Station Area Development

(2) Effect of HSR Start-up

(3) Planned Shinkansen

Station Complex

Tokyo Station City



SAPIA TOWER
GRAN TOKYO SOUTH TOWER
(Hotel, Conference halls, College, etc.)
(Offices, Restaurants, etc.)

SHOPPING FLOOR

3 Benefits of HSR Related Development

(1) Station Area Development

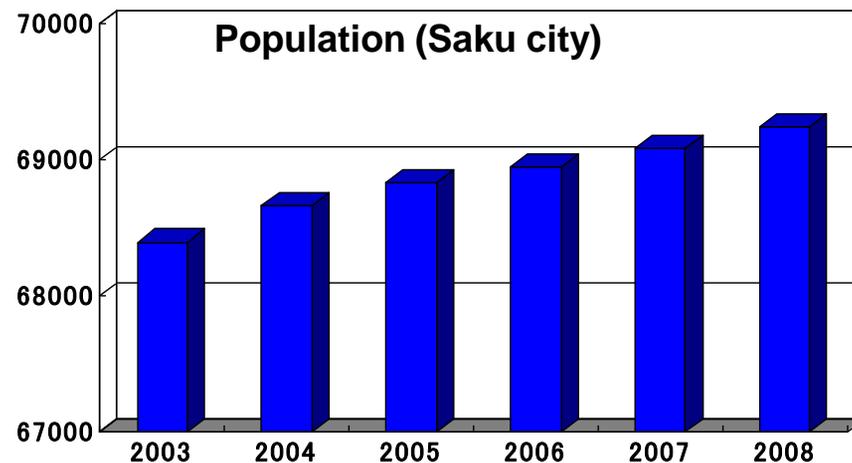
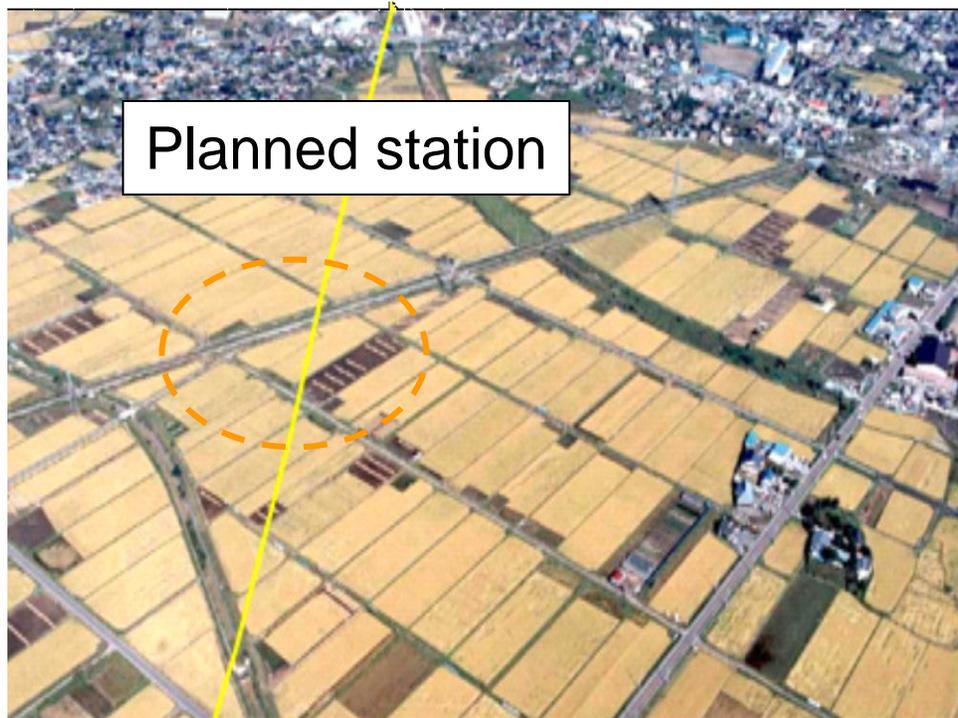
(2) Effect of HSR Start-up

(3) Planned Shinkansen

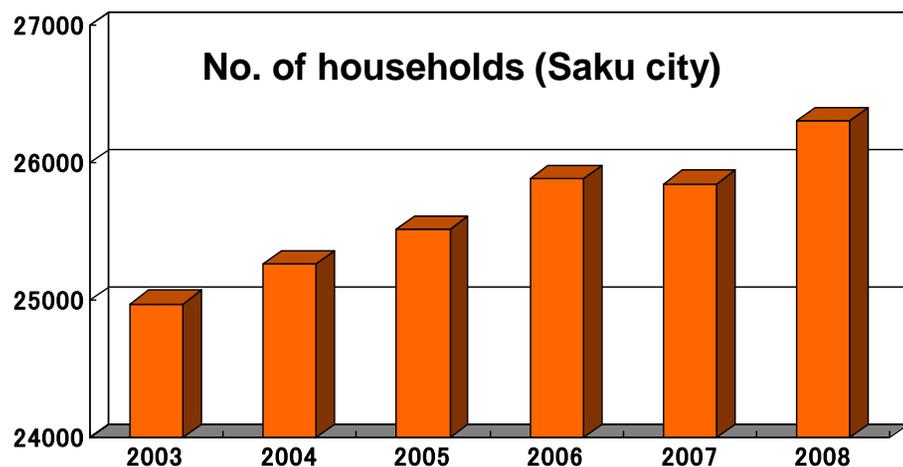
Sakudaira Station (completed in 1997)

(Development around Sakudaira Station)

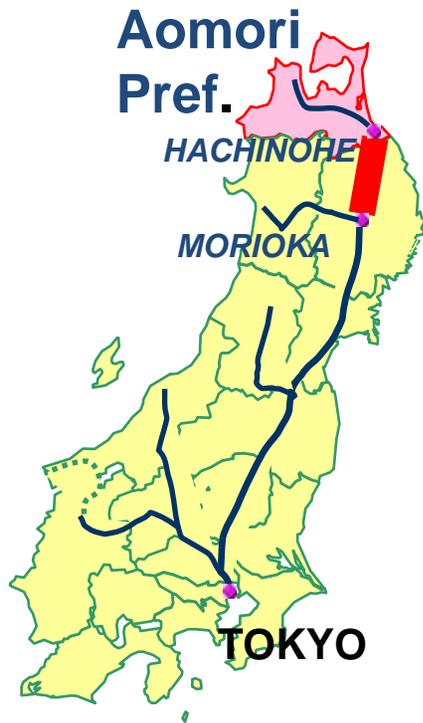
Before Shinkansen



10 years after opening (August 2007)



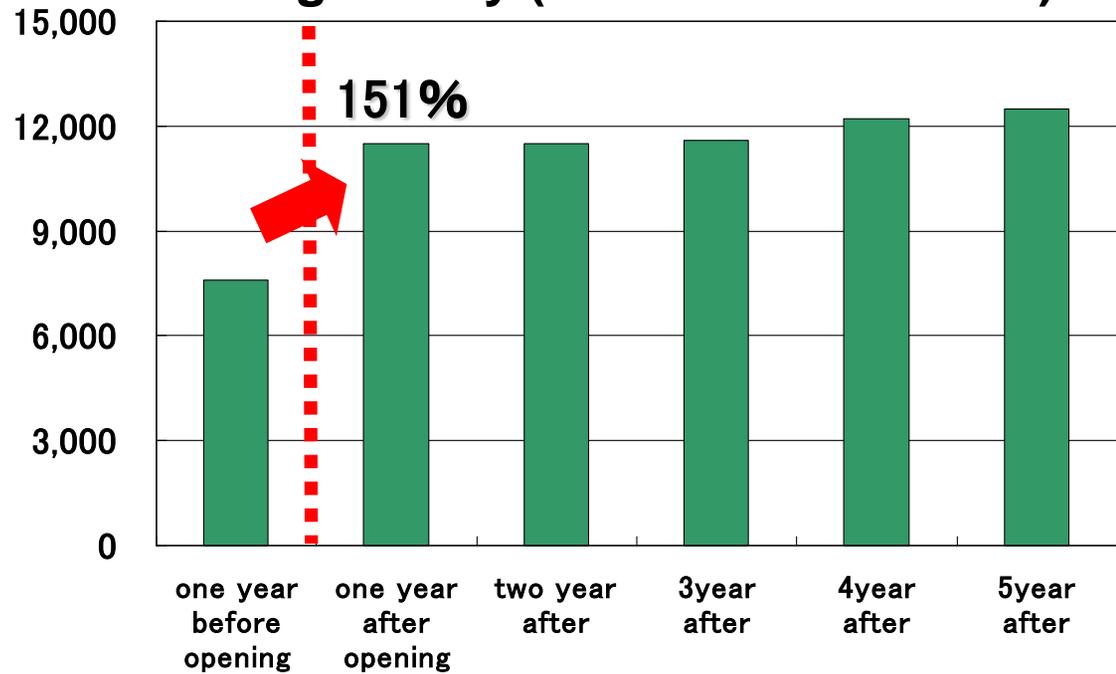
Morioka – Hachinohe Extention (completed in 2002)



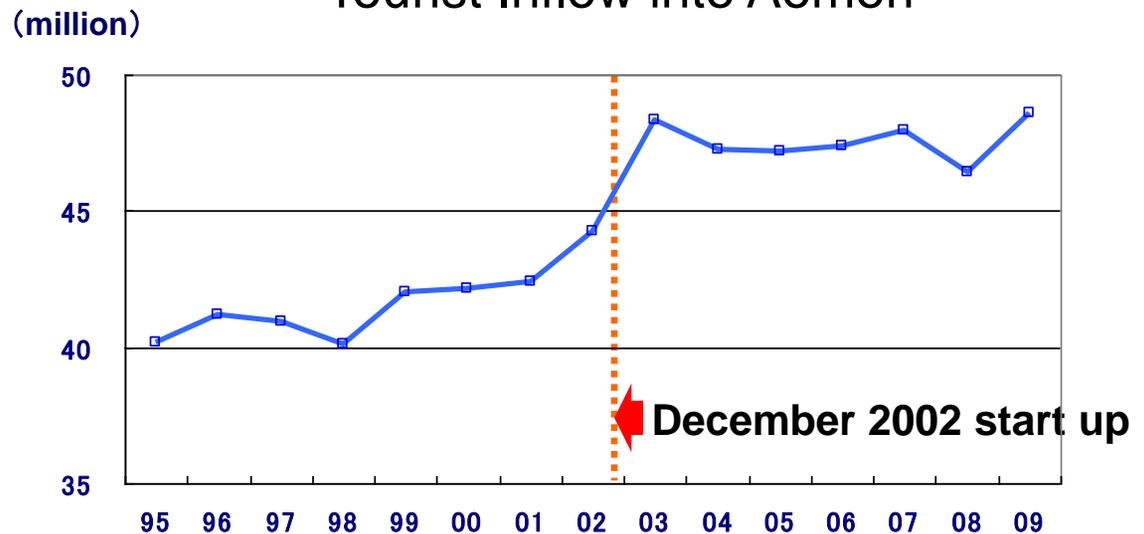
7,000 Jobs created
(After 11 months)

Increased tourist consumption inducing greater employment, as calculated by the Aomori Prefectural Government

Passengers/day (Morioka-Hachinohe)



Tourist Inflow into Aomori



3 Benefits of HSR Related Development

(1) Station Area Development

(2) Effect of HSR Start-up

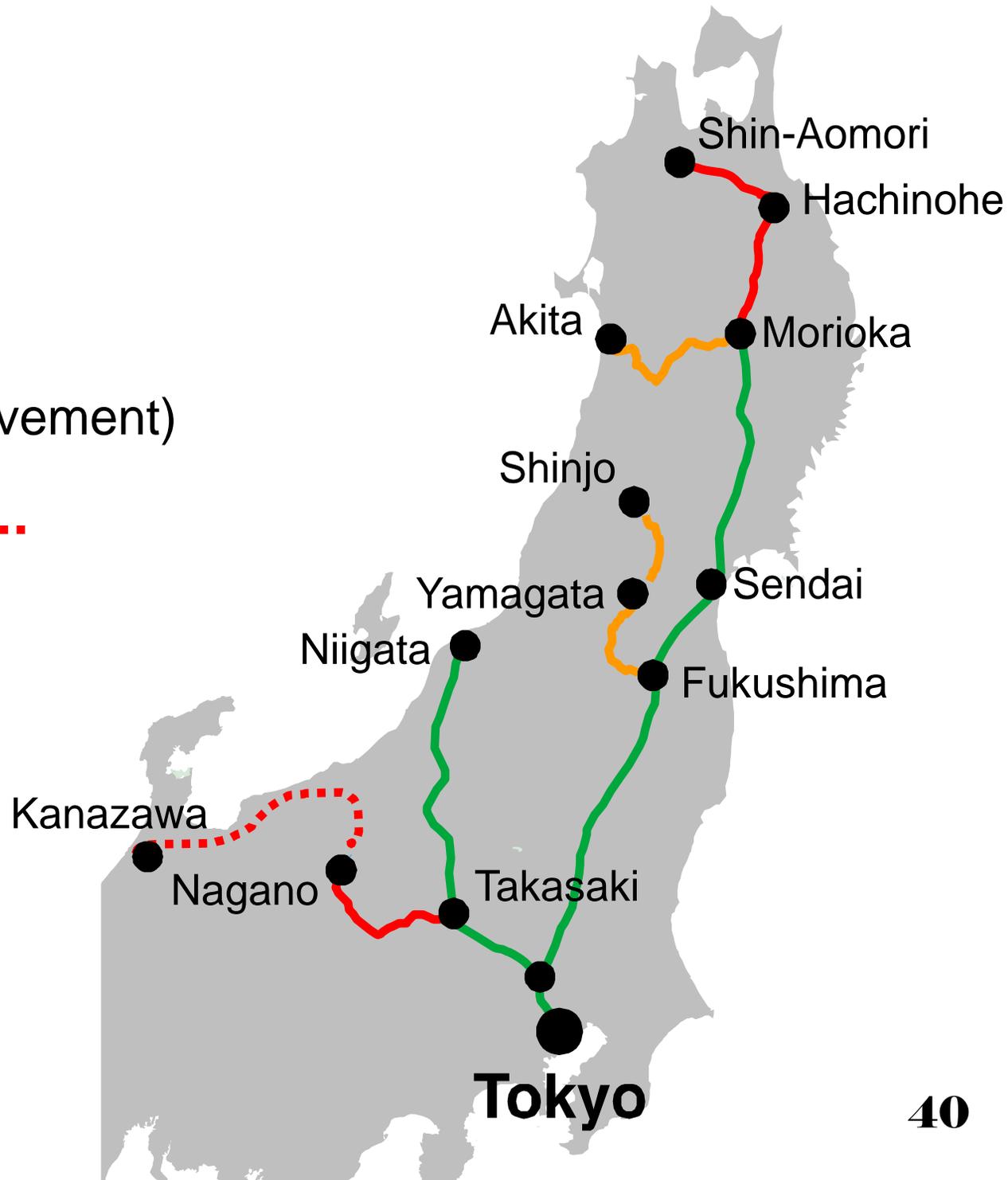
(3) Scheme of Shinkansen Construction

Scheme of Shinkansen Construction [1]

1. Pre - 1991 : 
(Dedicated line)

2. Through service : 
(Conventional line Improvement)

3. After 1991 :  and 
(Dedicated line)



Scheme of Shinkansen Construction [2]

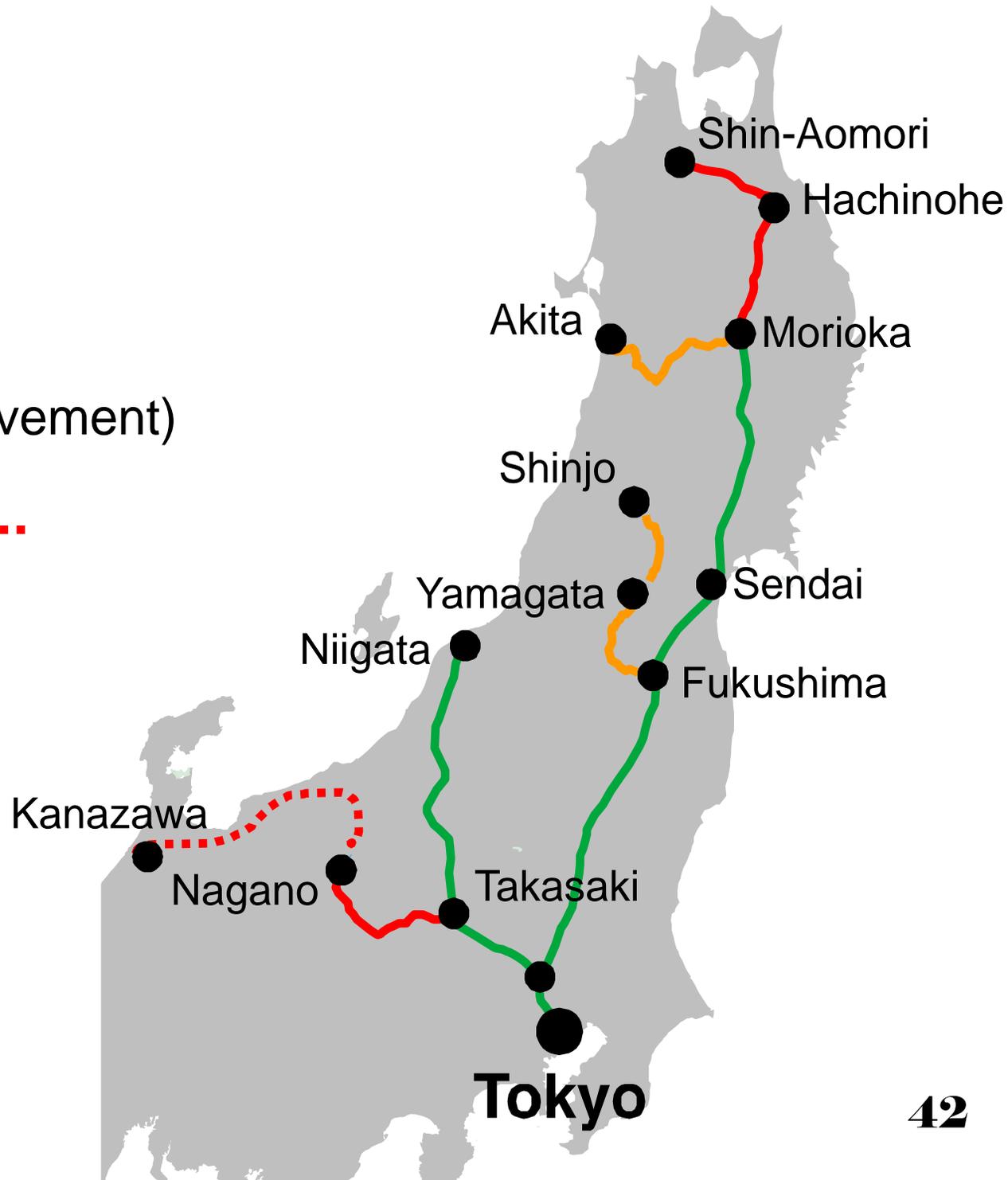
1. Shinkansen up to 1991
 - Tohoku Shinkansen built by JNR
 - Joetsu Shinkansen built by the government
 - Both assets purchased by JR East
2. Track Improvement (Narrow gauge \Rightarrow Standard gauge)
 - Total construction cost slashed 90%
 - Track improvement costs born by central government, municipalities & JR East at a ratio of 2:4:4 (eg. Morioka - Akita)
3. New Dedicated line
 - Construction entity: government
 - Construction costs born by the central government & municipalities at ratio of 2:1
 - JR East pays a leasing fee and operates

Scheme of Shinkansen Construction [1]

1. Pre - 1991 : 
(Dedicated line)

2. Through service : 
(Conventional line Improvement)

3. After 1991 :  and 
(Dedicated line)



Conclusion

1. HSR is the essential social infrastructure, now & for the future.
2. HSR ridership will increase with not only higher operating speed, but also with through service and commuter/business use.
3. HSR can enhance total community mobility making total trip time shorter, through linkage with urban rail network, park & ride and so on.

Conclusion

4. Commercial development of stations raises customer convenience and company revenues.
5. HSR can contribute to the environment and create many jobs.
6. Successful HSR scheme should be based on the better public-private partnership:
Public works to build infrastructure, private sector to operate trains.

Thank you for your attention

