NEXTSTATION
MARRAKECH 2015

5TH INTERNATIONAL CONFERENCE ON RAILWAY STATIONS

Palmeraie Palace
Marrakech, 21-22 October 2015
Introduction of JR East Shinkansen, High Speed Stations

- Takumi, ISHII
- Deputy Director, JAPAN RAILWAY GROUP, Paris Office
- 4A, Station for high speed service
Content

- Railway in Japan
- Shinkansen Network
- About JR East
- JR East’s Shinkansen Network
- Compositions of Shinkansen Station
- Development around the Shinkansen Station
- Economic effects of Shinkansen’s Station
Railway in Japan

208 Operators
9.0 billion passengers a year for six JRs
23.3 billion passengers a year for the entire Japan
(63.9 million passengers a day)

As of 1st July, 2014
## Shinkansen Network

### Line Section

<table>
<thead>
<tr>
<th>Line Section</th>
<th>Length (km)</th>
<th>Max. Speed (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tokaido</td>
<td>552.6</td>
<td>285</td>
</tr>
<tr>
<td>Sanyo</td>
<td>644.0</td>
<td>300</td>
</tr>
<tr>
<td>Tohoku</td>
<td>713.7</td>
<td>320</td>
</tr>
<tr>
<td>Joetsu</td>
<td>303.6</td>
<td>240</td>
</tr>
<tr>
<td>Hokuriku</td>
<td>345.5</td>
<td>260</td>
</tr>
<tr>
<td>Kyushu</td>
<td>288.9</td>
<td>260</td>
</tr>
<tr>
<td><strong>Sub Total</strong></td>
<td><strong>2848.3</strong></td>
<td></td>
</tr>
<tr>
<td>Akita</td>
<td>127.3</td>
<td>130</td>
</tr>
<tr>
<td>Yamagata</td>
<td>148.6</td>
<td>130</td>
</tr>
<tr>
<td><strong>Sub Total</strong></td>
<td><strong>275.9</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3124.2</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Length: kilometers in revenue service

As of 1st July, 2014
**JR EAST, a passenger railway company, is the largest railway company in JAPAN**

Network: 7,512 km

No. of Passengers: 17,11 million /day
(the largest in the world)

No. of Trains: 12,780 /day

Operating Revenue: 18,40 billion euros

Net Income: 1,29 billion euros

Total Stock Market Value: 19,69 billion euros

No. of Employees: 59,240 persons

- No subsidies from the government

*Numbers are as of FY ended March 31, 2015
1 euro = 140 yen*
**Network:** 1470 km
- Dedicated Shinkansen line: 1,194 km
- Gauge-converted conventional lines: 276 km

**No. of Passengers:** 278,000 /day

**No. of Trains:** 337 to 415 /day

Very exceptional in Japan
5 directional network from Tokyo

Blue line: operated by JR west
Compositions of Shinkansen Station

Ex. Tokyo Station

> Passengers: 418,184 passengers/day (as Shinkansen: 72,850 passengers/day)
> Income: 278,294 million yen/day (No.1 in all JR East’s stations)

- Shopping area
- Art museum
- Concourse
- Platform for commuter train
Compositions of Shinkansen Station

The way for Shinkansen’s platform

Passenger has to pass 2 gates to Shinkansen platform

Passenger flow

Conventional line
Train

Conventional line
Platform

Concourse
(Conventional)

Concourse
(HSR)

Entrance or Concourse outside ticket gates

Automatic ticket gates

HSR Platform

HSR Train

Conventional line
Train
Compositions of Shinkansen Station

Ex. Tokyo Station before Shinkansen’s platform
Facilities for passenger
Compositions of Shinkansen Station

Ex. Tokyo Station on Shinkansen’s platform

Facilities for passengers

- Signs for passengers
- Signs for lines of passengers
- Shinkansen’s Platform
- Smoking Room
- KIOSK
- Lunch box shop
Compositions of Shinkansen Station

New Comprehensive Shinkansen System (COSMOS)

The COSMOS system incorporates the latest computer and communications technology to comprehensively systematize all work, including train and crew allocation for the Tohoku, Joetsu and Nagano Shinkansen lines, train operation control, and maintenance and management of rolling stock, tracks, and electric, signaling and communication systems.
Compositions of Shinkansen Station

Passenger Information System

- Trainset information
- Station where stopped
- Platform level
- Near stairs
- Concourse level
- Near train entrance
- Waiting passengers’ positions
- For the next train
- For the train after the next train
- Linked with COSMOS

Trainset information

Station where stopped

Platform level

Near stairs

Concourse level

Near train entrance

Waiting passengers’ positions

For the next train

For the train after the next train

Linked with COSMOS
Compositions of Shinkansen Station

Ex. Tokyo Station on Shinkansen’s platform
Facilities for staff

Station Staff room
Signal for cleaning staff
Stop sign for driver
Lift for staff
AED

Shinkansen’s Platform
Telecommunication for staff
“Tele Speech”
Compositions of Shinkansen Station

Ex. Tokyo Station on Shinkansen’s platform
Facilities for cleaning staff

Why cleaning staff’s office exists under the platform?

In the Past, Supply water for restaurant car and receiving rubbishes
Quick turnaround at Tokyo terminal station

With a 12-minute turnaround, we can:

- provide very frequent service (large capacity)
  4 minute headways
- with minimum train sets => Minimum train sets
- simplify station layout and infrastructure

only 2 platforms with 4 tracks

=> Minimum infrastructure
Compositions of Shinkansen Station

Ex. Shin-Aomori Station

- Passengers: 4,850 passengers/day
- Income: 11,497 million yen/day

For Tokyo

Concourse

Platform of conventional line

Waiting room for Shinkansen

Shopping area
Compositions of Shinkansen Station

Ex. Shin-Aomori Station  Facilities for passenger

- Smorking Room
- Shinkansen’s Platform
- Lift
- Bench & slot machine
- Waiting room on Shinkansen’s Platform
- Signs for passengers
- KIOSK
Compositions of Shinkansen Station

Ex. Shin-Aomori Station  Facilites for staff

- Control box for home door
- Emergency train stop button
- Monitor for station staff
- Station Staff’s room
- Signal for cleaning staff
- Lift for staff
- Handcart for sales aboard Shinkansen
Development around the Shinkansen Station

How to increase passengers in the local Shinkansen Station?

✓ Trying to Make attractive places around the Shinkansen Station

Ex. Aomori Station  It’s close Shin-Aomori Station

“A Factory”  (Souvenir in Aomori special products)

Memorial train on ferryboat  (Formerly Aomori-Hakodate ferry line)

Museum of Summer festival in Aomori, “Wa Rasse”
Development around the Shinkansen Station

How to increase passengers in the local Shinkansen Station?

✔ Trying to Make attractive places around the Shinkansen Station

Ex. Itoigawa Station  Hokuriku Shinkansen operated by JR West

✔ The place for community and travelers

Itoigawa Station

Facilities for children and travel information center

Facilities for Train fan in the station
Ex. Sakudaira Station 〔Hokuriku Shinkansen〕

Start of operation: October 1, 1997

Distance from Tokyo (km) 102.8 mile
No. of trains per day
S: 53
L: 44

S: Shinkansen (High speed)
L: Local line

Number of Shinkansen Passengers  
(Start of operation: October 1, 1997)

Population growth
Saku city (area before the merger)
Economic effects of Shinkansen’s Station

Development around Sakudaira Station

Before the hokuriku shinkansen starts

Planned station

Municipal tax growth (Saku city)

10 years after opening (August 2007)

Householder growth
Saku city (Area before the merger)

Sakudaira St.
Ex. Honjo Waseda Station [Joetsu Shinkansen]

Start of operation: March 13, 2004

<table>
<thead>
<tr>
<th>Distance from Tokyo (km)</th>
<th>53.8 mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of trains per day</td>
<td>50</td>
</tr>
</tbody>
</table>

Number of Shinkansen Passengers (per Day)

<table>
<thead>
<tr>
<th>Year</th>
<th>Passengers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>1700</td>
</tr>
<tr>
<td>2012</td>
<td>2100</td>
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</tbody>
</table>
Economic effects of Shinkansen’s Station

Town management of Honjo Waseda

Property developing plan

Waseda university research park

Waseda Honjo high school

New Town design

Park & Ride
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