Shinkansen networks and JR East

East Japan Railway Company
Shinkansen networks in Japan
# Railways in Japan

<table>
<thead>
<tr>
<th></th>
<th>Railways in Japan</th>
<th>JR Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Operators</td>
<td>207 ((^*1))</td>
<td>7 ((^*2))</td>
</tr>
<tr>
<td>Operating (km)</td>
<td>27,314</td>
<td>20,000</td>
</tr>
<tr>
<td>No. of Employees</td>
<td>210,557 ((^*3))</td>
<td>129,374</td>
</tr>
<tr>
<td>Passenger-km</td>
<td>385.5 billion</td>
<td>242.3 billion</td>
</tr>
<tr>
<td>Ton-km</td>
<td>22.5 billion</td>
<td>22.3 billion</td>
</tr>
</tbody>
</table>

(As of 2009.03.31)

*1: JR Group + other railways, light rail, monorail, etc.
*2: 6 Passenger railways + 1 Freight railway
*3: People engaged in railway business
Current Shinkansen Network

Daily average No. of passengers: **930,000** (as of 2012.03.31)

- Tokaido and Sanyo Shinkansen: 568,000
- Tohoku and Joetsu Shinkansen: 304,000
- Kyushu Shinkansen: 32,000
- Hokuriku Shinkansen: 26,000

Total Length: **2,620 km**

- JR East
- JR Central
- JR West
- JR Kyushu
- Under Construction
- Planned line

**Sanyo Shinkansen (554km)**
- Hakata
- Nagasaki
- Okayama
- Shin-Yatsushiro
- 2011

**Tokaido Shinkansen (515km)**
- Shin-Osaka
- Nagoya
- 1964
- 2015

**Tohoku Shinkansen (593km)**
- Tokyo
- 1982
- Niigata
- 1992
- 1997
- 2010

**Joetsu Shinkansen (270km)**
- Akita Line (Upgraded Conventional line)
- 2004

**Hokuriku Shinkansen (117km)**
- Niigata
- 1992
- 1999
- 2002

**Kyushu Shinkansen (127km)**
- Kagoshima-Chuo
- 2004

**Yamagata Line (Upgraded Conventional line)**
- 1982
- 1992
- 1999
- 2011

- Under Construction
  - Sapporo
  - Shin-Hakodate
  - Shin-Aomori
  - Hachinohe

- Planned line
  - Nagasaki
  - Shin-Yatsushiro
  - 2011

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Characteristics of Shinkansen

- **High-speed operation**: Max. speed of 300 km/h (320km/h from FY 2013)
- **High-density mass transport**: 15 trains per hour, Max. of 1,600 passengers
- **Safety**: No. of passenger fatalities: 0 since the start of operations
- **Reliability**: Train delay time: Less than 30 sec. for average of all trains per year
- **Eco-friendliness**: Less Co2 emissions
The Shinkansen Share versus other transport modes

Source: The Ministry of Land, Infrastructure, Transport, and Tourism, Research of the No. of passengers by distance and by transport mode
Future Development Plans for the Shinkansen

- In operation: 2,620km
- Under construction: 434km
- Construction planned: 533km

Hokkaido Shinkansen
completion planned at the end of fiscal 2015

Hokuriku Shinkansen
completion planned at the end of fiscal 2014

Kyushu Shinkansen
(Nishi-Kyushu route)
completion planned in fiscal 2017

(as of 2012.03.31)
Separation of Shinkansen Line Construction and Operation

○ Separation of construction and operation

<table>
<thead>
<tr>
<th>JR (Operation of Shinkansen)</th>
<th>Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>JRTT* (Construction and ownership)</td>
<td>Lease of facilities</td>
</tr>
</tbody>
</table>

*JRTT: The Japan Railway Construction, Transport and Technology Agency

○ Subsidy

(Budget for 2012 fiscal year: 2.67 billion euro) ※ €1 = ¥100

<table>
<thead>
<tr>
<th>Revenue from the sale of Shinkansen lines* to JR companies in 1991</th>
<th>Public works expenditure in national budget</th>
<th>Local government</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.07 billion euro</td>
<td>706 million euro</td>
<td>890 million euro</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>National government</th>
<th>17.8 billion euro</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Local government</th>
<th>890 million euro</th>
</tr>
</thead>
</table>

** Tokaido Shinkansen, Sanyo Shinkansen, Joetsu Shinkansen, Tohoku Shinkansen (Tokyo-Morioka)
Three types of Shinkansen

High speed
- Series E2 275km/h ★
- Series E5 320km/h ★

Large capacity
- Series E1 240km/h
e- Series E4 240km/h ★

Through service
- Series E3 275km/h ★
- Series E6 320km/h ★

★ With coupling/uncoupling functions
About JR East
Company Profile of JR East

- Established in 1987
- 60000 employees
- 7512km network
- 1689 stations
- 70 lines

<table>
<thead>
<tr>
<th></th>
<th>S: Shinkansen</th>
<th>C: Conventional lines</th>
</tr>
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<tbody>
<tr>
<td>Length of operating km (km)</td>
<td>1,134.7 (15%)</td>
<td>6,377.9 (85%)</td>
</tr>
<tr>
<td>No. of stations</td>
<td>37 (28*)</td>
<td>1,680</td>
</tr>
<tr>
<td>No. of trains per day</td>
<td>327 (2%)</td>
<td>12,430 (98%)</td>
</tr>
<tr>
<td>Passenger-km (Billion-km)</td>
<td>18.4 (15%)</td>
<td>106.7 (85%)</td>
</tr>
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</table>

(as of 2012.03.31)
Schemes of JNR Reforms

Japanese National Railways (JNR)

- Transferred in April 1987
- JNR Settlement Corporation

Division by Area

- JR Kyushu
- JR West
- JR East
- JR Central
- JR Hokkaido
- JR Shikoku

6 Passenger Railway Companies

- Hokkaido, East, Central, West, Shikoku, Kyushu

- Japan Freight Railway Company
- Railway Telecommunication Company
- Railway Information System Company
- Shinkansen Holding Corporation
- Railway Technical Research Institute
Patterns of Breakup and Privatization

Factors for judgment

1. Community-based multilateral management of major private railways as models
2. Full consideration to regional situations of passengers’ mobility and train operations
3. By clarifying proper management size and responsibilities, fermentation of competitive consciousness

Separation methods to accommodate individual characteristics of passenger and freight transports are applied.

Passenger railways

Freight railway

Territorial division

Management to accommodate regional situation and coordination of infrastructure and train operation

Separation of train operation and infrastructure management

Due consideration to characteristics of freight transport, separation from passenger railways
JR East Revenue Structure

Non Rail Business

- 33%

Transportation

- 67%

JR EAST Group Total

- € 25 billion

JR EAST Group

Operating income

- € 3.6 billion

Rail Revenues

- € 16 billion

Shinkansen

- 27%

Other area

- 5%

Tokyo area

- 68%

Conventional Lines

- 27%
Thank you for your kind attention