FEATURE

Measures Perpetuating JR East's Unlimited Growth Potential


Series E6 railcars

Unlimited Growth Potential

1. Enhancement of the Shinkansen Network

Operation of Shinkansen at Faster Speeds

Starting March 2013, JR East raised the maximum speed of the Series E5 railcars operating as the *Hayabusa* service from 300 km/h to 320 km/h (between Utsunomiya and Morioka) on the Tohoku Shinkansen Line. This consequently shortened the travel time between Tokyo and Shin-Aomori by 11 minutes to as short as 2 hours and 59 minutes.

Moreover, following the debut of the new Series E6 railcars as the *Super Komachi* service, the operating speed on the Akita Shinkansen Line was raised from 275 km/h to a maximum 300 km/h (between Utsunomiya and Morioka). As a result, the travel time between Tokyo and Akita was shortened by 5 minutes to 3 hours and 45 minutes at the quickest. The trip time will be shortened even more in spring 2014 when the *Super Komachi* service begins operating at up to 320 km/h—the same maximum operating speed as the *Hayabusa*.


Series E5 railcars

Maximum speed of the Hayabusa service raised to

320 km/h

Technology for Achieving Faster Speeds


A


B


C

To hold down the noise from operating at high speeds, the pantographs of JR East's latest Shinkansen railcars are fitted with sound blocking panels A on both sides. In addition to this, the equipment underneath the railcar floors is covered with sound-absorbing panels, and the gaps between railcars have canopies completely sealing them B C.


The lead railcar is designed with a long aerodynamic nose to reduce tunnel boom—the sonic shockwaves generated when high speed trains enter tunnels. For the lead railcar of the Series E5, this aerodynamic nose is 15 meters long.

Shinkansen Network Expansion

Hokuriku Shinkansen to Kanazawa

JR East will seize the opportunity to stimulate tourism and the flow of passengers between Tokyo and the Hokuriku region when it extends the Hokuriku Shinkansen Line to Kanazawa at the end of fiscal 2015.

The opening of this line will drastically curtail travel time between Tokyo and Kanazawa to *2 hours and 38 minutes, from the current 3 hours and 51 minutes. To put this in perspective, annual passenger flow (including air travel) between Tokyo and Kanazawa, and Tokyo and Toyama, is approximately 2.7 million and 1.9 million passengers, respectively. For the trip back and forth from Kanazawa, those passengers are currently divided 40:60 between rail and air travel. The new Shinkansen line to the area is expected to encourage more of these passengers to use the train, helping railways to gain market share.

But JR East will not stop at merely increasing the share of railway usage. The Group wants to increase passenger flow even more between Tokyo and Hokuriku. In addition to encouraging the flow of people between the two, JR East will develop sightseeing routes for Hokuriku that spill over into the neighboring prefectures of Niigata, Nagano and Gifu. Moreover, the Group will do this while working in cooperation with local communities and other transportation companies. As a base for those operations, JR East opened the Hokuriku Marketing Center in Kanazawa in April 2013.

Brand new Series E7 railcars will also be introduced in time for the Hokuriku Shinkansen Line's extension to Kanazawa. These railcars will offer enhancements in ride quality and barrier-free features to improve comfort, along with advanced braking capability to bolster safety performance. The railcars will also offer a *GranClass* cabin for passengers seeking a higher grade of travel quality.

New Series E7 railcars

Hokkaido Shinkansen to Shin-Hakodate (provisional name)

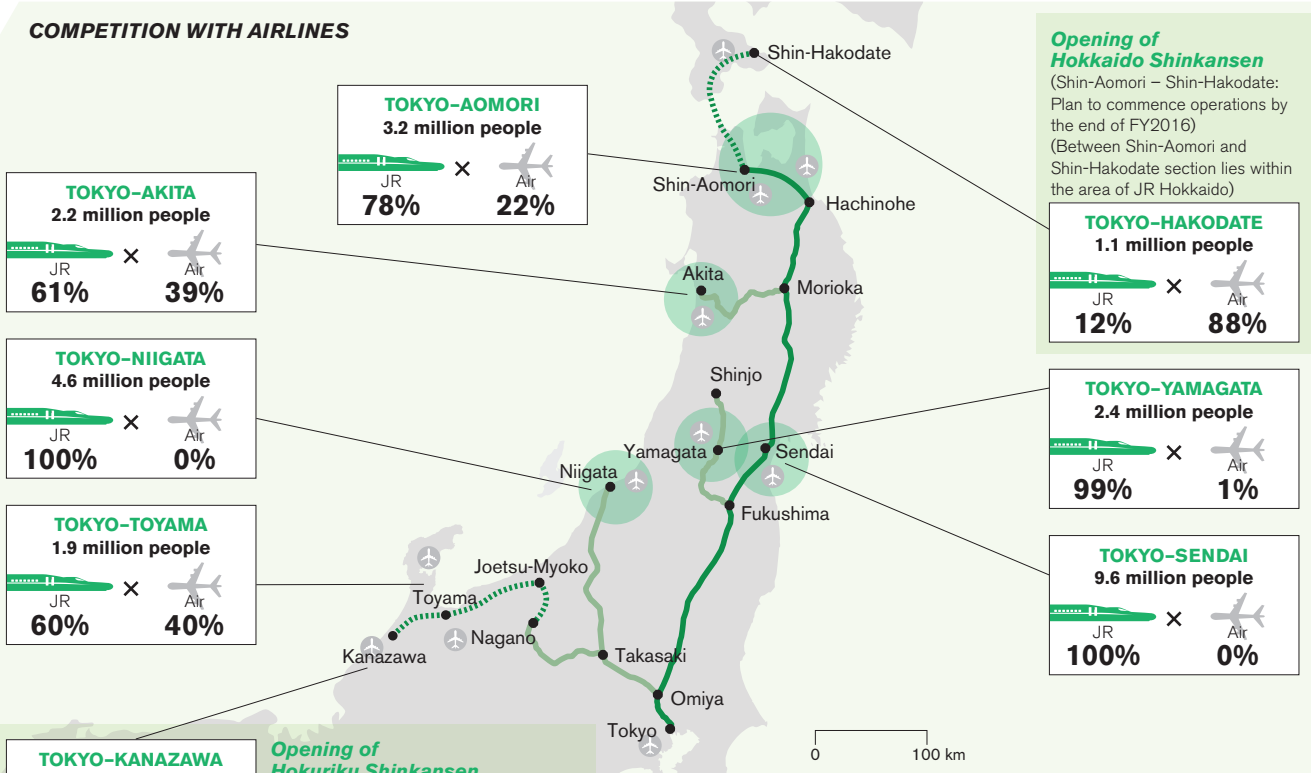
Looking further ahead, JR East will open the Hokkaido Shinkansen Line to Shin-Hakodate (provisional name) by the end of fiscal 2016. The new line will reduce the travel time between Tokyo and Hakodate to 4 hours and 8 minutes,* from 5 hours and 22 minutes. It will also provide JR East the opportunity to attract customers by tying together Aomori and Hokkaido as a single tourist destination, and expand the flow of passengers between Tohoku and Hokkaido.

* Estimates by the Ministry of Land, Infrastructure, Transport and Tourism, Apr. 2012.

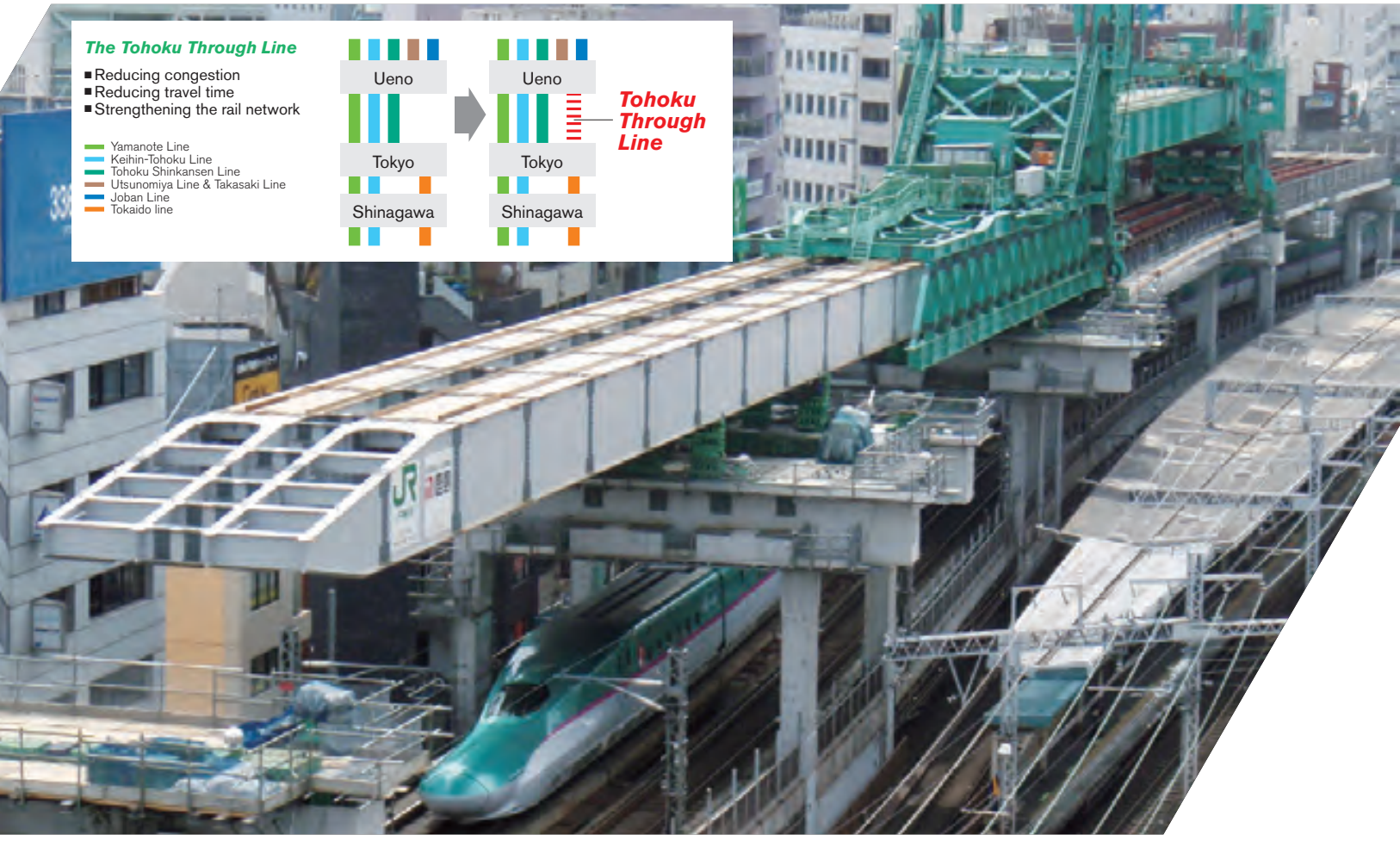
Travel Time Between Tokyo and Kanazawa Cut by

1 Hour and 13 Minutes

COMPETITION WITH AIRLINES



* Market share of JR East and of the airlines are from the fiscal year ended March 2013 (except number of passengers and market shares of trains and flights on the Tokyo–Hakodate Line from FY2012)



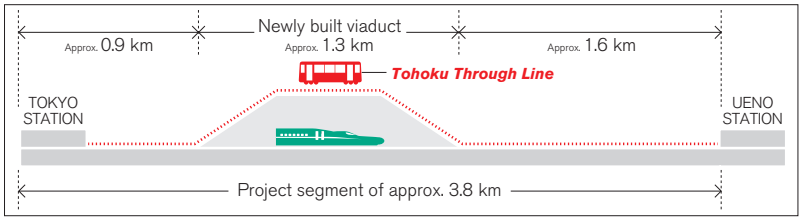
Unlimited Growth Potential

2.The Tohoku Through Line

JR East is making headway with the Tohoku Through Line project, which involves constructing a multi-level viaduct near Kanda Station and building new railway tracks between Tokyo and Ueno stations. This is being done so that certain services of the Utsunomiya, Takasaki, and Joban lines that now terminate at Ueno Station can instead be linked to Tokyo Station and the Tokaido Line bound for Shimbashi and Shinagawa.

Upon completion, the Tohoku Through Line will ease overcrowding on the Yamanote and Keihin-Tohoku lines during the morning rush hour. JR East forecasts that the degree of crowding on the Yamanote Line between Ueno and Okachimachi Station, estimated at 200%*, will fall to below 180%. Furthermore, direct service via this new line will also eliminate transfers at either Ueno or Tokyo Station, thus shortening travel times from the Utsunomiya, Takasaki, and Joban lines to the Tokaido Line. In effect, the projected travel time between Omiya and Shinagawa Station should be cut by 11 minutes or so, to about 45 minutes.

STRUCTURAL DIAGRAM OF THE TOHOKU THROUGH LINE



Consequently, the project will enhance the north-south corridor of JR East's railway transportation network in the Tokyo metropolitan area. The Company believes the Tohoku Through Line will spur the flow of people between the northern and southern ends of the Tokyo metropolitan area, and stimulate economic activity in outlying communities.

Construction of the line began in May 2008. Apart from the spatial challenge of building the line above existing Shinkansen tracks, there were time constraints that limited the construction work to a gap of around three hours between operation of the last commuter train at night and the first one in the morning. Nevertheless, work on the bridge piers comprising 263 steel pieces, from December 2009 through October 2011, and the elevated viaduct in 19 sections, from December 2010 through April 2013, was completed without incident. JR East is now making steady progress with the sound proofing walls, tracks and electrical work for this through line with the aim of opening it for service in fiscal 2015.

Moreover, in view of the expected change in passenger flow once the Tohoku Through Line opens, construction has also begun on renovation work at Tokyo, Shimbashi, Nippori, Shinagawa and other stations the new line will affect.

* Fiscal 2012 figures disclosed by the Ministry of Land, Infrastructure, Transport and Tourism. When the degree of crowding is 200%, passengers standing are cramped and pressed against one another, but there is still enough elbow room to read a magazine. At 100%, boarding is equal to passenger capacity.

Participating in Overseas Railway Projects

There is increasing interest globally in railways as a means of public transportation, and various railway projects throughout the world are being considered. The overseas railway market is projected to grow at an average annual rate of 2.5% going forward. As a result, the market should increase in size to ¥22 trillion by 2020.

Currently, JR East is developing an overseas railway consulting business in upstream fields such as business feasibility studies and design around Japan International Consultants for Transportation Co., Ltd. (JIC), a subsidiary JR East established in 2011. As a railway operator, JR East's strengths lie in its expertise in railway management and administration, including operation and maintenance. Furthermore, working closely with companies worldwide, we aim to participate in overseas railway projects including in the operation & maintenance field (planning, guidance and support related to train operation, equipment maintenance and related areas). One particular area of focus will be fast-growing Asia, which we have positioned as a priority region. We also intend to address railway projects in various regions while carefully identifying risks.

Developing Overseas Sites

We opened overseas offices in Brussels in November 2012, and Singapore in March 2013, in addition to our existing New York and Paris offices. The purpose of these new offices is to strengthen our information gathering and marketing capabilities with respect to overseas railway projects.

Expanding Railcar Manufacturing Operations

Since 1995, JR East has manufactured railcars for commuter trains at the Niitsu Rolling Stock Plant. By bringing Japan Transport Engineering Company (J-TREC) into the JR East Group in April 2012, we have enhanced our development and design capabilities, while incorporating J-TREC's ability to manufacture express railcars.

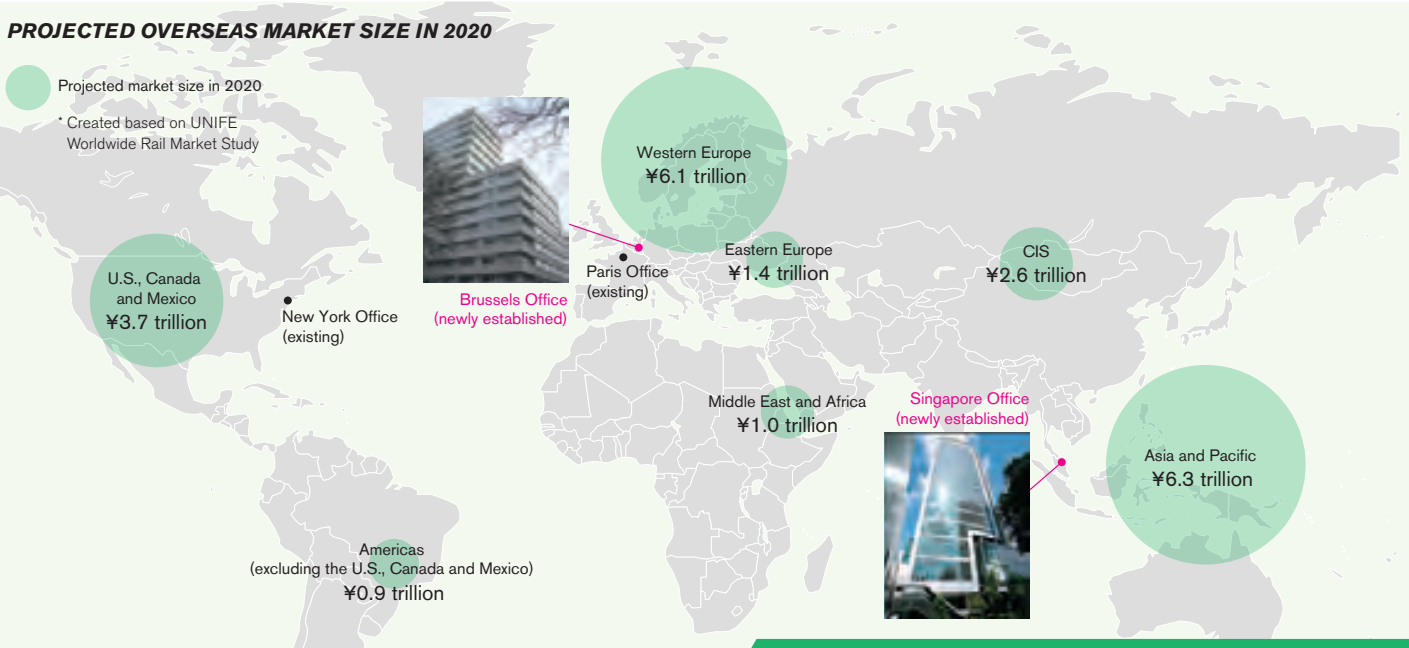
We will maximize synergies between J-TREC and the entire JR East Group, including Niitsu Rolling Stock Plant, in order to establish railcar manufacturing operations as the JR East Group's fourth business pillar, following railway, life-style service businesses and *Suica* operations.

By further honing the JR East Group's comprehensive technological capabilities ranging from railcar manufacturing to operation and maintenance, we aim to expand the share of Japanese railcars in overseas markets. Leveraging our strengths particularly in transportation services in urban areas, our primary near-term target will be railcars for commuter trains for urban areas mainly in Southeast Asia, as well as railcars for high-speed railways.

Furthermore, J-TREC is pressing ahead with a business strategy for promoting the appeal of its stainless-steel railcars, where the company is particularly strong. Under the brand name *sustina*, J-TREC will drive home the advantages offered by these railcars in terms of their high reliability and low lifecycle costs.

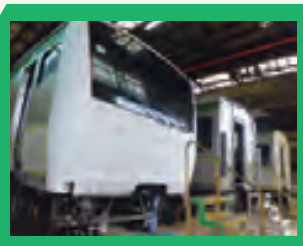
Unlimited Growth Potential 3.Tackling New Business Areas

PROJECTED OVERSEAS MARKET SIZE IN 2020



Overseas railway market projected to increase to

¥22 trillion by 2020



Inside the J-TREC factory

Railcar assembly line

Tokyo Station regained the original appearance of when it first opened in 1914 after preservation and restoration of the Tokyo Station *Marunouchi Building* was completed in October 2012. However, in the space of a hundred years, Tokyo Station has become more than a railway terminal, and has evolved into a town of its own.

Since opening as Japan's premier railway terminal in 1914, Tokyo Station has grown into an enormous complex, with 11 platforms and 22 tracks housing the railway services of JR East. Approximately 750,000 passengers on average make use of this station each day (fiscal 2012).

In view of the business potential these passengers present, JR East has been involved in a project named *Tokyo Station City* that seeks to redevelop the station and the area around it as a "town."

For quite some time now, Tokyo Station has been evolving from a station and transit point, to a town that people flock to by the name of *Tokyo Station City*.

The Yaesu Entrance Development Project

At present, JR East is conducting major construction work at the Yaesu Entrance of Tokyo Station and its vicinity.

As a component of this Yaesu Entrance Development Project, part of the *GranTokyo North Tower* and all of the *GranTokyo South Tower* were opened in 2007 as the twin towers to the station complex. This was followed by the full opening of the *North Tower* in October 2012 upon the completion of additions. Accessibility between the two towers is being improved by construction of a pedestrian deck covered with a big roof, named *GranRoof*. In addition, the project will see the development of the station plaza to enhance Tokyo Station's function as a transportation hub.

The *GranRoof* when completed will house additional station facilities and shops, as well as highway bus facilities, which have already been opened.

Yaesu Entrance Development Project

Apart from Tokyo Station, JR East is also promoting the development of attractive towns centered on railway stations at its other major railway terminals including Shinjuku, Shibuya, Shinagawa, Yokohama, Chiba and Sendai stations.

Approx.
750,000 passengers
use Tokyo Station each day on average

Unlimited Growth Potential 4.*Tokyo Station City*

A panoramic view of the restored Tokyo Station *Marunouchi Building*

MAJOR FACILITIES OF TOKYO STATION CITY

TOKYO STATION CITY

GranTokyo North Tower
Phase I: Opened October 2007
Phase II: Opened October 2012

- Office space for lease: 63,000 m²
  (with 15,300 m² owned and leased by JR East)
- Retail space for lease: 63,800 m²

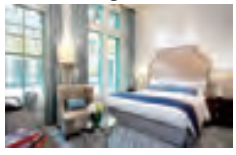
GranRoof
(Scheduled completion fall 2013)

Sapia Tower
Opened March 2007

- Office space for lease: 30,600 m²
- *Hotel Metropolitan Marunouchi*: 343 guest rooms

Tokyo Station *Marunouchi Building*
Re-opened October 2012

- *The Tokyo Station Hotel*: 150 guest rooms



GranTokyo South Tower
Opened October 2007

- Office space for lease: 75,000 m²
  (with 49,400 m² owned and leased by JR East)

"Ekinaka" Retail Area
(Commercial space inside the station)

- *GranSta*
  Opened October 2007
  62 stores (2,130 m²)
- *NorthCourt*
  Opened December 2010
  16 stores (1,000 m²)
- *SouthCourt*
  Opened March 2010
  31 stores (1,300 m²)
- *KeiyoStreet*
  Opened March 2011
  27 stores (1,400 m²)
- *CentralStreet*
  Opened August 2012
  5 stores (860 m²)

CentralStreet

Preservation and Restoration of Tokyo Station Marunouchi Building

The red-brick station has long been a symbol of Tokyo Station. The building was rebuilt for use as a two-story construction following World War II, after the vaulted domes at the north and south end and the interior were burned down in 1945. Later on Tokyo Station *Marunouchi Building* was designated as an Important Cultural Property of Japan in 2003. Soon after, JR East began work on preserving what survived of the building and restoring the third story that was lost as an important historical landmark, to pass the building on to future generations.

The building's restoration to its original form was completed in October 2012, and since then Tokyo Station *Marunouchi Building* has become a new tourist attraction frequented by many people.

In addition, the hotel and gallery within were refurbished along with the building's restoration, and a JR EAST Travel Service Center for travelers visiting Japan from abroad was established inside Tokyo Station *Marunouchi Building* to further enhance customer convenience.

Nearly 100 years
Since Establishment in 1914

Tokyo Station *Marunouchi Building*–Preservation and Restoration Work Now Complete

The Tokyo Station *Marunouchi Building* when it first opened

The rebuilt Tokyo Station *Marunouchi Building* after damages sustained in World War II

The restored Tokyo Station *Marunouchi Building* as of October 2012