

# Reinforcement of Earning Power by Utilizing Latest Technologies

## —Aiming for safer, more convenient, and more comfortable railways—

JR Central is promoting "reform of business operations" to reduce routine costs by 80 billion yen on a non-consolidated basis over 10 to 15 years by establishing an efficient business execution system, and is taking on the challenge of realizing a new concept, "revenue expansion," to reinforce earning power.

In recent years, technologies such as sensing, image recognition, big data transmission and analysis, AI, and robotics have evolved significantly. JR Central is committed to providing safer, more convenient, and more comfortable railway services with greater efficiency by proactively incorporating these technologies to fundamentally transform current transportation services and address future declines in the labor force.

In October 2022, we have summarized our future vision of railways and our main initiatives to work toward it. Through these initiatives, we will integrally develop the three generations of railway of the Conventional Lines, Tokaido Shinkansen, and Chuo Shinkansen over the future to vigorously fulfill our mission of "contributing to the development of Japan's main transportation artery and social infrastructure."



Work to improve the environment in stations and Shinkansen trains



Consider enhancing Shinkansen seat categories



Provide new ways to use Shinkansen

## More Convenience

- Expand our online reservation and ticketless boarding service to provide customers with a smooth travelling experience.
- Leverage ICT and other latest technologies to enhance means of communication with customers and improve the convenience of transportation services.



Propose new travel styles by using "EX Hotels and Activities," "EX Shinkansen Travel Packages," etc.

## More Comfort

- Strive to improve services by understanding the needs of customers and introducing new perspectives and flexible ideas.

## Safer Operation

- Improve safety from various angles to continue to provide transportation services that can be used by customers with peace of mind.
- Improve the reliability of transportation services by introducing systems and equipment that use the latest technologies in railway operation and maintenance. Railway personnel will focus on more creative work, such as reflecting local situations and data into planning.



Enable ticketless boarding by expanding the availability of TOICA to all lines and enhancing the online reservation service



Install more ticket machines that can provide guidance through video calls



Driver-only operation will be made possible by installing car-side cameras in certain rolling stock



Install platform doors at all Shinkansen stations



Monitor the condition of tracks and railway line facilities using image recognition and other technologies



Monitor the condition of railcars by using condition monitoring data



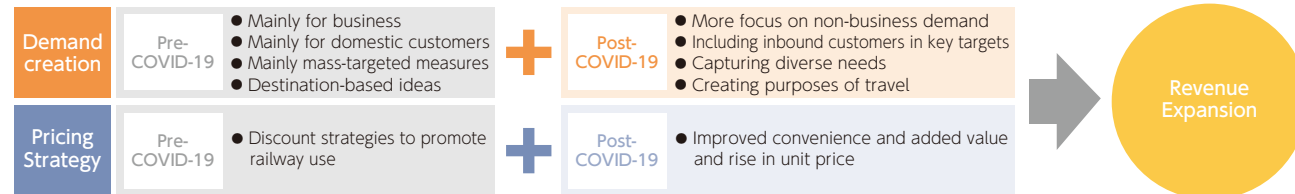
In response to the end of the COVID-19 pandemic, in addition to our conventional strategy of responding to strong demand and raising profits by increasing the transport capacity and convenience of the Tokaido Shinkansen, we are working for further Revenue Expansion by creating new demand and implementing new pricing strategies.

### Demand creation

We are also focusing more on capturing non-business demand, such as tourism, and are now focusing our efforts on targeting the rising inbound tourism demand. Not only are we incorporating diverse needs through new ideas that are not bound by traditional methods and in collaboration with other companies and regions, but we are also working on creating purposes of travel.

### Pricing Strategy

In addition to reviewing discount rates in our discount strategy, we are also working to provide better services, such as improving convenience and added value, so that we can charge fees that are commensurate with the services we provide. We are continuing to request the government to allow non-reserved seat limited express fees on the Shinkansen to be changed by notification and to introduce a system that allows flexibility in passing on cost increases due to inflation to fares and fees.



## 1. Demand creation

### Business

Based on the idea of stimulating face-to-face demand, we are running the "Let's Go Meet" campaign to foster momentum for conducting business face-to-face. We are also focusing on MICE, which is expected to attract a large number of visitors, and aim to capture new demand by attracting events from outside our area and by holding "online events" offline. Furthermore, we are working on measures to help passengers make effective use of their travel time on the Shinkansen, such as the "Chartered Shinkansen Package," which allows passengers to rent out individual cars of the Tokaido Shinkansen and hold exclusive events on board.

### Inbound tourism

The number of tourists visiting Japan has been on an uptrend. We are analyzing passenger trends and product usage by country and region and are strengthening our sales measures, such as developing more effective advertising and strengthening ties with travel agencies to expand sales channels.

### Non-business

Taking the initiative in newly creating travel purposes so as to generate new demand, we are collaborating with content holders of anime, games, movies, etc., distributing content that can be exclusively seen on the train, planning tours of areas used as locations in anime, etc., and holding various events. We also collaborate with concerts, sporting events, and other events to stimulate demand for rail travel by selling advance tickets to EX Service members.



TAKARAZUKA STAR EXPRESS CAMPAIGN  
(One Full Shinkansen Train Charter Tour)

## 2. Pricing Strategy

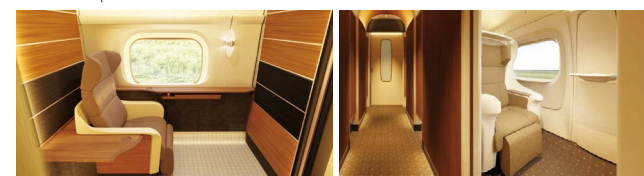
### Enhanced convenience

With regard to EX Service, we have further enhanced our services by introducing "EX Hotels and Activities" and "EX Shinkansen Travel Packages," which allow customers to seamlessly reserve and pay for their entire trip, including the Shinkansen, hotel, local transportation at the destination, and sightseeing plans, as well as the launch of the service to allow reservation of Shinkansen seats up to one year in advance. Additionally, for the Japan Rail Pass, we have revamped the website

### Enhancement of added value

By further enhancing the environment to enable passengers to work seamlessly before, during, and after getting on the train, we are working to increase added value. Specifically, we are introducing and expanding our "EXPRESS WORK" workspace business in stations and buildings directly connected to stations, our "S Work P Seats" that give customers more personal space and allow them to work more comfortably, and our "Business Booths" which are private rooms on board Shinkansen trains that can be used for meetings and web conferences. Additionally, we will introduce Premium Class Seats (private type) offering a high level of privacy and secure environment on some N700S trains on the Tokaido Shinkansen in fall 2026. In FY2027, we will introduce Premium Class Seats (semi-private type) offering a

high level of privacy and quality. Details of equipment specifications, service content, operating sections, prices, and other information will be announced when the service approaches its launch. We are also implementing initiatives for the Green Cars in order to improve the service and set fees that are commensurate with the service.



Premium Class Seats (private type) Premium Class Seats (semi private type)

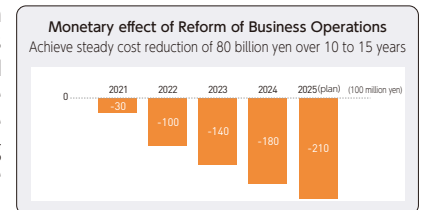
## 1. Introduction of the automated train operation system (GoA2)

We will be introducing an automated train operation system (GoA2) to the Tokaido Shinkansen to support the work of train operators.

- Aiming for the commercial introduction of trains equipped with automated train operation functions\* of the automated train operation system (GoA2) around 2028, we are currently conducting running tests.
- Assisted by enhanced operations support, the train operator performs the safety check on the platform and opens/closes the doors when the train arrives at and leaves each station. In an emergency, the train operator, as the person in charge of the train, supervises conductors and pursers in coping with the situation.

- Conductors focus on supporting customers who are not accustomed to traveling or otherwise need assistance on the train and on patrolling within the cars to improve security.

\*Scheduled operation functions, fixed-position stopping functions, etc.



## 2. Expansion of driver-only operation using image recognition technology

Visual safety confirmation by installing cameras on the sides of carriages for certain trains of three or more cars, etc.

- In addition to the drivers checking the images from cameras installed on each carriage, etc., since the use of the technology is now within reach, we have decided to install safety confirmation support devices that use image recognition technology to detect approaching passengers, etc. on four-car 315 series trains and implement driver-only operation with four-car 315 series trains as shown below.
- Fall 2026: Implemented for the Kansai Line (between Nagoya Station and Kameyama Station) and the Taketoyo Line (Planned).
- From FY 2026 onwards: Implement sequentially for the Tokaido Line (between Mishima Station and Numazu Station, between Hamamatsu Station and

Toyohashi Station, between Ogaki Station and Maibara Station), the Gotemba Line, etc.

Images of the car-side cameras ① through ④

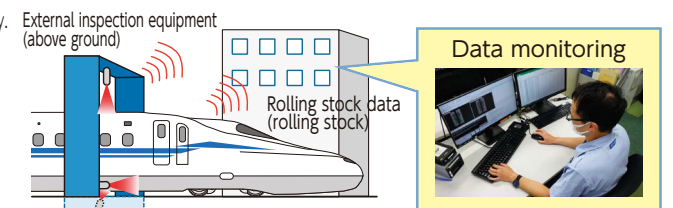


Example: Detecting a person approaching a train and alerting the train operator by sound

## 3. Automating rolling stock visual inspection

This system automates the visual inspection of rolling stock, which is currently done manually.

- We have developed a system that utilizes image analysis and other technologies to automatically inspect the exterior of rolling stock when they enter a depot or station.
- After the system is introduced, it is expected that much of the manual visual inspection work will be reduced, and the higher frequency of rolling stock exterior inspection enabled by this system will further improve safety.
- Testing using commercial rolling stock will begin in FY 2024, with full-scale operation scheduled to begin around FY 2029.

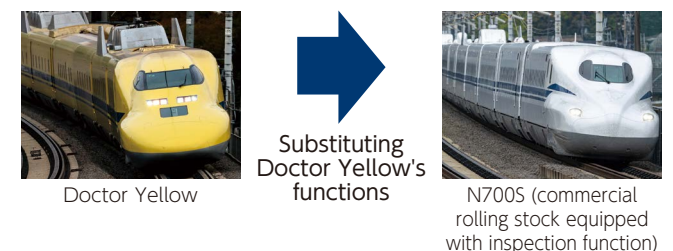


Monitoring of the condition of rolling stock using rolling stock data and data from the visual inspection equipment.

## 4. Technology development for commercial rolling stock inspection

Commercial rolling stock equipped with inspection function reduces the labor required for maintenance of electrical and track facilities.

- By equipping some N700S trains to be introduced from FY 2026 onwards with enhanced inspection functions for commercial rolling stock, we will be able to replace the inspections currently conducted by Doctor Yellow.
- Commercial rolling stock will be able to collect data equivalent to or better than that of Doctor Yellow at a higher frequency, improving the safety and reliability of equipment. It will also be possible to replace some of the inspection work currently performed by on-site staff, further reducing the labor required for maintenance of electrical and track equipment.



## 5. Expansion of customer support services

We will strive to achieve both efficient station operation and continued provision and improvement of services.

- We will enhance remote guidance services, such as "reserved seat ticket machines with support functions" and "customer support service," as well as support for ticket purchases.
- There will also be more stations at which passengers can buy tickets early in the morning and late at night.
- The "customer support service" has already been introduced on the Tokaido Line (from Obu Station to Toyohashi Station, from Nagoya Station to Maibara Station), the Chuo Line (Tsurumai Station (Nagoya University Hospital Exit), Ozone Station (South Exit), Kachigawa Station), the Kansai Line (from Nagoya Station to Kuwana Station), the Taketoyo Line, and the Iida Line (Ushikubo Station).

