JR KYUSHU IR DAY 2022

Toward the Railway of the Future

November 29, 2022

Kyushu Railway Company

Director and Managing Corporate Officer,
Director General of Railway Operations Headquarters

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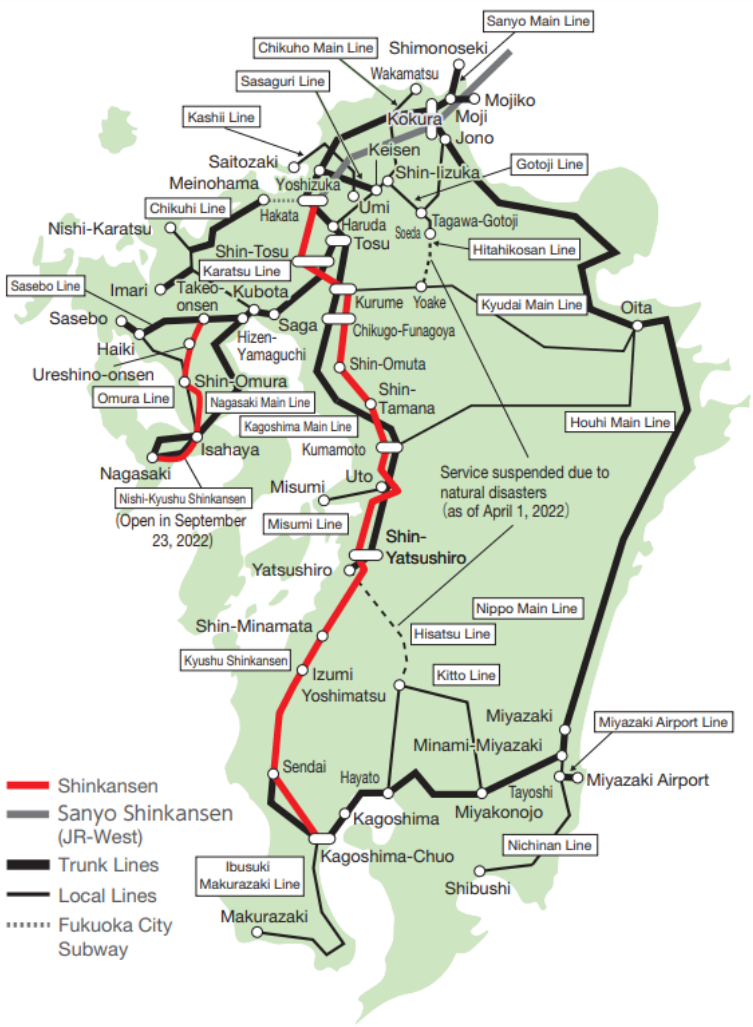
1 Characteristics of the Railway Business

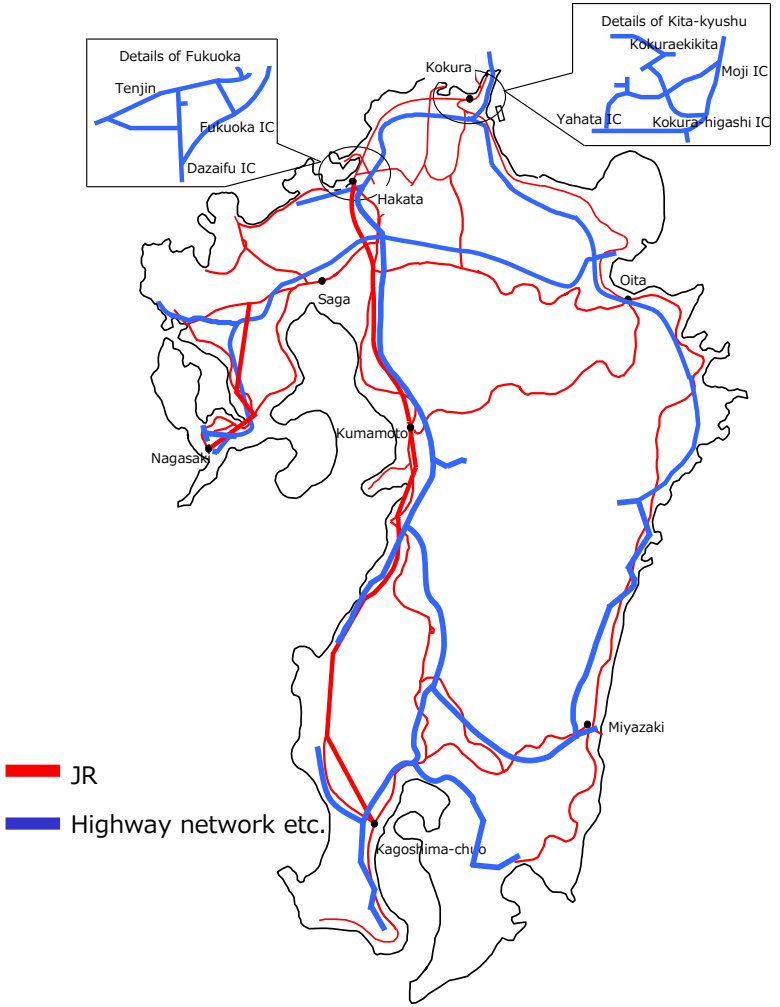
●Characteristics of JR Kyushu's railway business

・Kyushu's population is shrinking and aging faster than in the rest of Japan.
・Competition with private cars and highway buses is fierce in Kyushu as the highway network is being developed in stages.

Railway network



Highway network

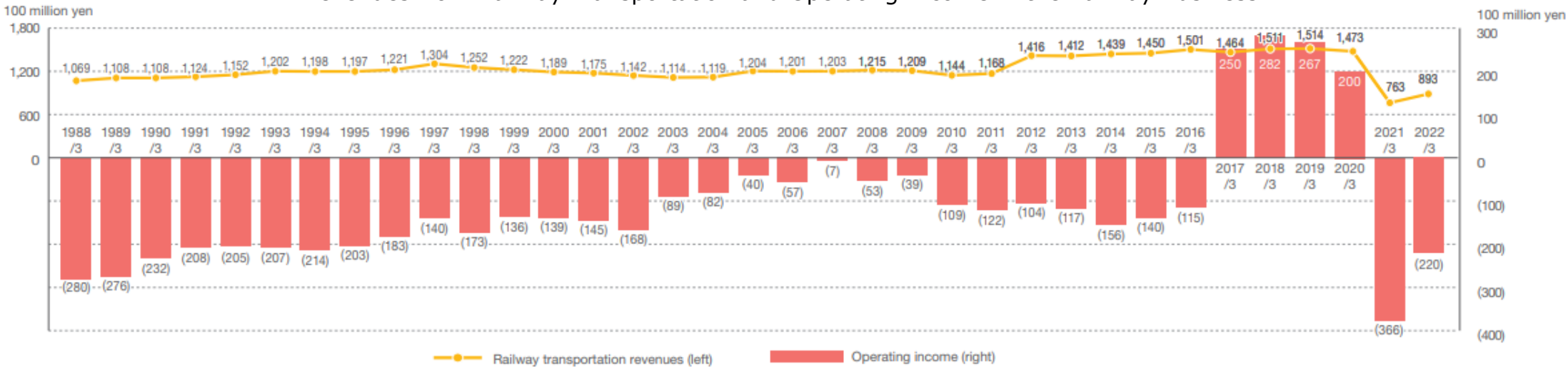


1 Characteristics of the Railway Business

●Characteristics of JR Kyushu's railway business

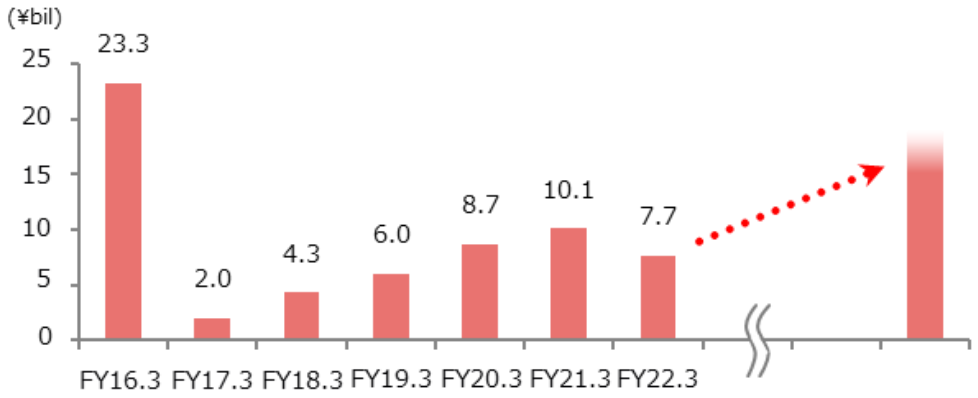
・From our start at the time of breakup and privatization in 1987, we have had numerous unprofitable local lines.
・Due to the full opening of the Kyushu Shinkansen line in 2011 and other factors, pre-pandemic transportation revenues exceeded ¥150.0 billion.

Revenues from Railway Transportation and Operating Income in the Railway Business



●Gradual increase in depreciation costs

・Decrease in depreciation costs in conjunction with impairment losses on fixed assets held in the railway business (approximately ¥520.0 billion) recorded on March 31, 2016
・Capital investment of between ¥25.0 billion and ¥30.0 billion a year conducted in railway business after impairment losses
・Gradual increase of ¥1.0–2.0 billion per year in depreciation costs going forward due to continuation of current trends



1 Characteristics of the Railway Business

● Pre-pandemic efforts to improve profits

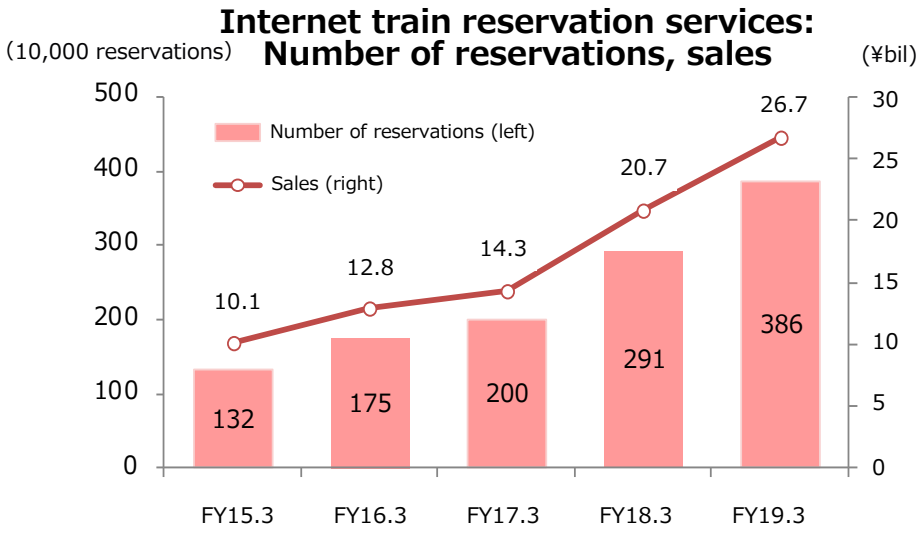
Raise revenues

Increase and speed up intercity transportation

Changes in the number of trains and travel times <April 1987→April 2019>

Hakata to Nagasaki	[26 trains → 52](+26) [2:13→1:48](-0:25)
Hakata to Oita	[18 trains → 63](+45) [2:45→2:01](-0:44)
Hakata to Kumamoto	[50 trains → 112](+62) [1:38→0:32](-1:06)
Hakata to Kagoshima	[22 trains → 72](+50) [4:33→1:16](-3:17)

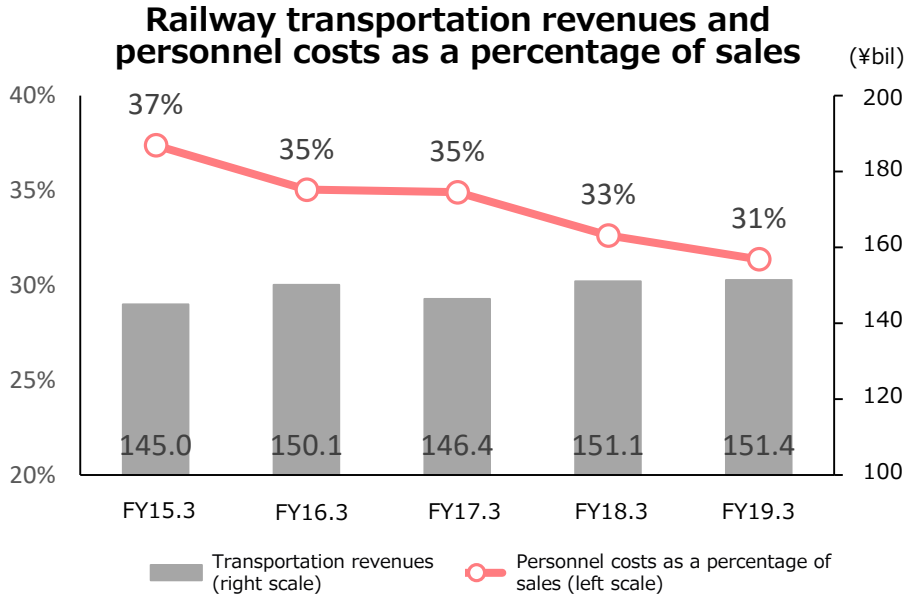
Promote use of the internet reservation service



Reduce costs

Realize efficient business operations

- Slim station systems
- Move to single-person operation
- Achieve labor savings through mechanization, etc.
- Optimize business operations through business transfers
- Streamline organization



2 COVID-19 and BPR

● Issues faced during COVID-19 and the post-pandemic

- Weaknesses of the railway business (over-reliance on flow of people, fixed cost ratio too high) exposed
- As the sales outlook is not expected to recover dramatically in the post-pandemic, efforts to reduce costs continuously is urgently called for to restore profitability.

BPR (Business process re-engineering) introduced over a short period
Objective: Achieve ¥14.0 billion* reduction in fixed costs during the current medium-term business plan

*Compared with FY20.3, excluding extraordinary items

● BPR project characteristics

- Implement structural reforms targeting railway business operations and back office

Reform without exceptions	・No significant cost reductions possible by extending conventional approaches ・Thoroughly collect and analyze objective information such as amounts, time, number of people ・Reexamining organizational boundaries and conventional rules, and what we aim to be
Quickly consider and decide	・Plan shakeout measures swiftly (plan in 4 months, execute in 2 years) ・Management swiftly decides on whether or not to implement measures
Taking ownership	・Project leaders issue weekly reports for real-time sharing, including among the 2,100 employees of Group companies ・Solicit ideas from a wide range of employees (4,000 ideas) and hold opinion-exchange meetings

2 COVID-19 and BPR

●Key BPR initiatives

・Implement optimization of service levels, increase efficiency of inspection and maintenance, multi-skilling, etc.
・For BPR, basically focus on reducing fixed costs without investing

Establish new service systems

Review station staffing structure through the use of DX, discontinue ticket-sales counters, and reduce operating hours, etc.

Promote use of the JR Kyushu app and internet reservations

Establish a new rolling stock and ground equipment systems

Renovate rolling stock to increase boarding efficiency and handle internally those operations related to rolling stock, etc.

Use longer seats in rolling stock

As we expand the number of segments where trains are operated by a single person, we will ensure safety by installing cameras on rolling stock and installing platform railings at some stations.

Camera on rolling stock

Optimize timetables (fall 2022 timetable revisions)

・Revise the operating system to match passenger usage
・Particularly on conventional lines, revise operating system centering on the Fukuoka metro area, expand number of segments where trains are operated by a single driver, and introduce other measures.

Train-kilometers	Rolling stock owned	Expected cost reductions (full year)
(2.3)%	(7)%	¥(0.8) billion

Increase efficiency of inspection and maintenance

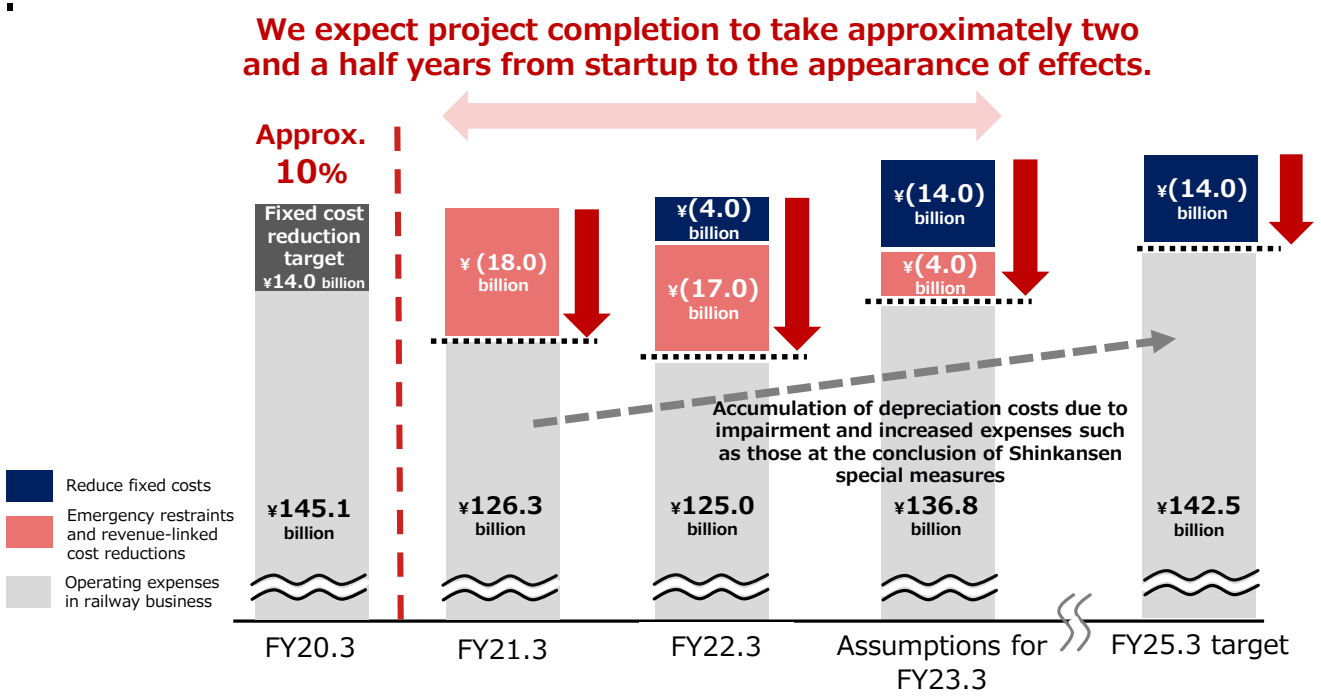
・Revise replacement standards by enhancing inspection accuracy.
・Reduce labor requirements by changing rolling stock materials.
・Revise inspection/maintenance operations based on train lines' state of use.

Promote employee acquisition of multiple skills

On the Nishi-Kyushu Shinkansen, which opened in September 2022, the driver conducts vehicle inspections along with the staff in charge of rolling stock.

●Completion of BPR

・We are on track to meet our fixed-cost reduction target of ¥14.0 billion this fiscal year.



●Numerical targets of the current medium-term management plan (FY2025.3)

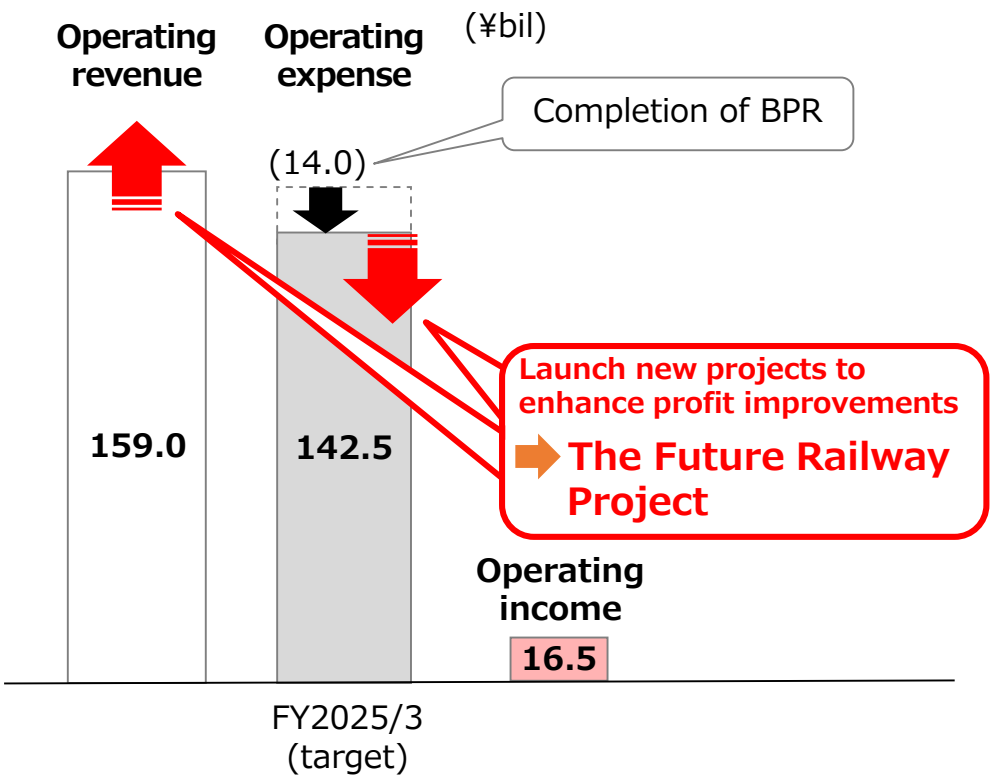
・We aim for operating revenue of ¥159.0 billion, around 96% of the level in FY2020.3.

・We expect to move into the black, and are targeting operating profit of ¥16.5 billion, even factoring in the accumulation of depreciation costs and the conclusion of Shinkansen special measures.

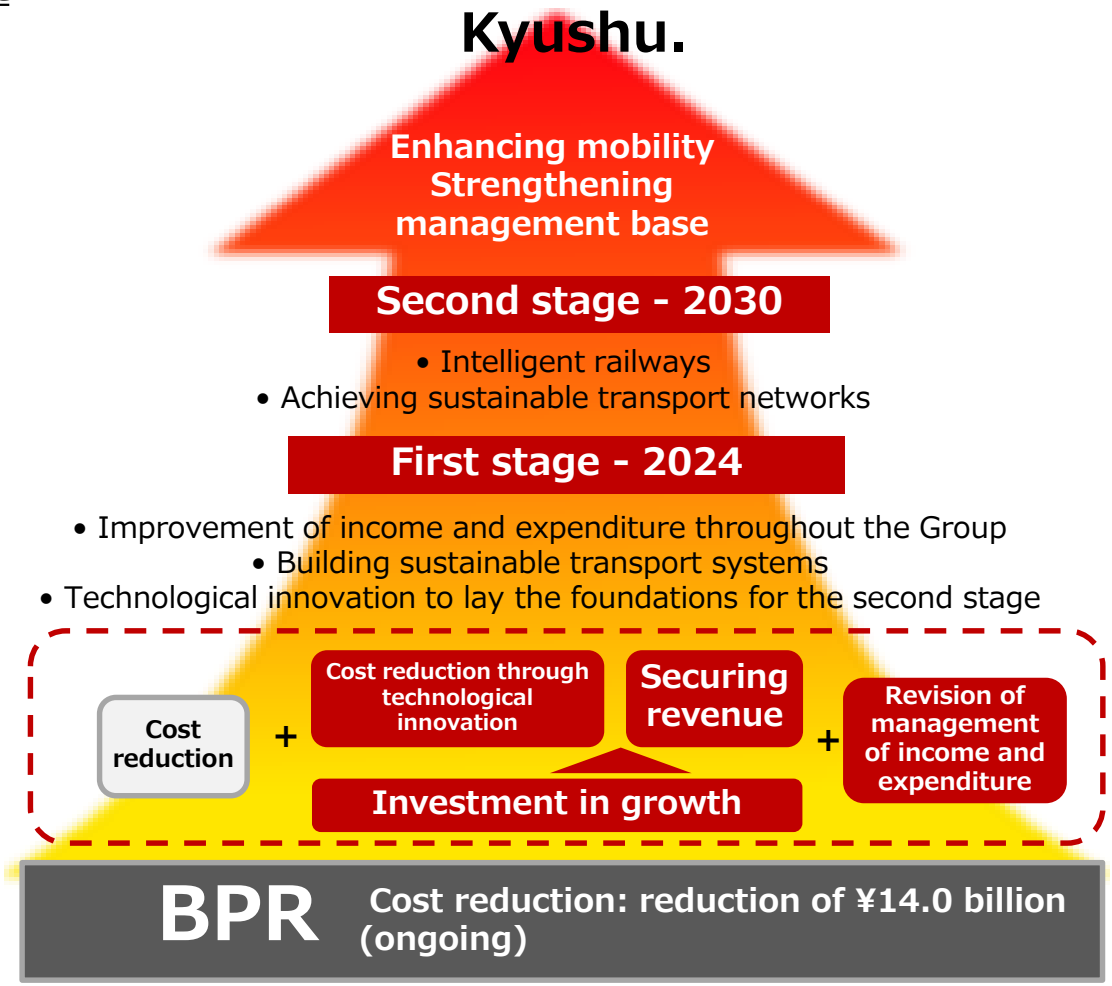
The Future Railway Project

Taking a railway business streamlined through BPR as our starting point, we will work to advance mobility and strengthen our management capabilities to create the "future of railways" that will drive city-building in Kyushu.

Relationship between the medium-term business plan and the Future Railway Project



Create the "future of railways" to drive urban development in Kyushu.



3 The Post-Pandemic World and the Future Railway Project

● Aims of the Future Railway Project

Strengthen [defense] with an eye on the future	Strengthen [offense] with an eye on the future
Build management strength to continue to fulfill the railway's mission in a stable manner despite risks such as an unstable external environment.	Build management strength to proactively make investments that lead to "growth and evolution" in "safety" and "service" with an eye on the railway of the future.
Ongoing impact of COVID-19 Shrinking population, climate change (intensification of disasters)	Large-scale upgrades of rolling stock and facilities after the medium-term business plan period and investment for future growth

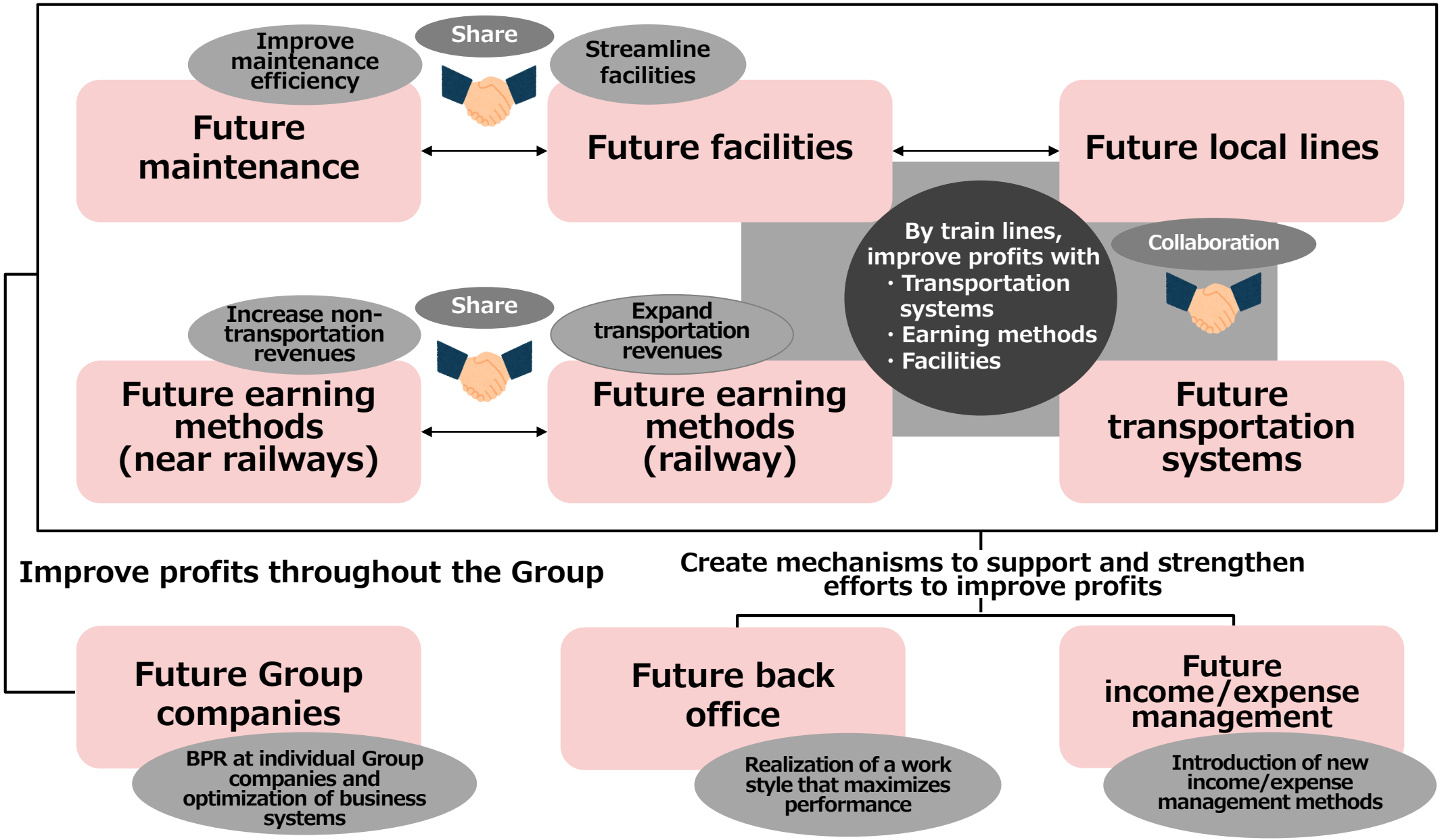
Accumulation of depreciation costs

● Differences between BPR and the Future Railway Project

BPR Project	Future Railway Project
Considered by individual organizations	Considered by cross-functional teams
Short term (completion to take approximately two and a half years)	Medium to long term (sights set on FY2025.3 and FY2031.3)
Focus on cutting costs	Improve provides by earning revenues and investing

●Promotion structure for the Future Railway Project

・We have formed cross-functional teams, and cross-organizational studies are underway.



3 The Post-Pandemic World and the Future Railway Project

●Specific examples for consideration: Future earning methods (railway)

Raise revenues

Maximize lifetime value (LTV) of customers
Railway transportation revenues = number of people ((1) new + (2) repeat customers) × (3) unit price

		To date	Future Railway
1	Take on the challenge of acquiring new customers and increasing the number of customers	・Opened Shinkansen ・Opened new stations ・Stimulated travel demand and planned campaigns	・**Refine D&S trains** ・**Ensure inbound traffic** ・**Transition from car-using demographic** ・**Urban development based on stations, new station development**
2	Cultivate repeat customers	・Increased service level ・D&S trains ・Online reservations, EX Service ・JR Kyupo ・JR Kyushu Walking	・**Digital marketing for each stage of life** ・**Expand JR Kyushu app and point service** ・**Take on challenges of MaaS and subscriptions** ・**Enhance plans targeting railway fans**
3	Receive appropriate compensation	・Reevaluated discount tickets ・Increased limited express surcharges, etc. ・Yield management	・**Enhance yield management** ・**Take on the challenge of creating new value** ・**Introduce pricing based on value provided**

Station system optimization

Agile and efficient operation of station systems

●Specific examples for consideration: Future earning methods (near railways)

We will work to define key strategies for creating new markets (customers) by leveraging our capabilities and open innovation.

Our capabilities = strengths

- Brand strength, creditworthiness
- Customer base
- Railway network/ network
- Human resources (technical capabilities, administrative capabilities)
- Assets

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Open innovation

- Sales capabilities
- Collaboration with other companies
- Specialization
- Utilization of skills
- Information
- Track record (construction)
- New technologies

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Our ideals	Key strategies
Viewing the transition to a decarbonized society as an opportunity for business growth, we will introduce energy conversion technologies such as storage batteries in collaboration with other companies.	Energy, environment
To promote the sustainable development of Kyushu, we will grow into a group that broadly supports social infrastructure through expansion of the private sector domain and public-private partnership initiatives in the construction segment.	Social infrastructure

●Specific examples for consideration: Future transportation systems

Provide “flexible transportation capacity to meet demand”

Optimal rolling stock and train crew operation

Change operation

Forecast demand

Number of boardings and disembarkations

Sales measures

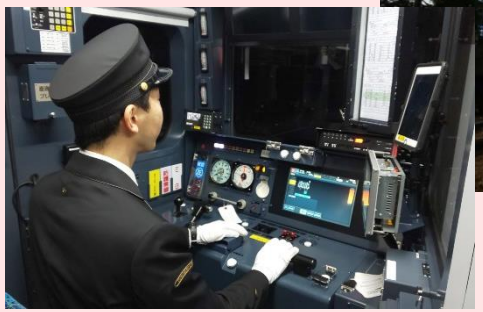
Requests

Understanding the flow of people

Automation
Labor savings

Flexible response to various changes in demand (e.g., additional trains, etc.)

Increase in self-driving trains



- Realize self-driving trains (GoA2.5) (target of end-FY2025/3)
- Consider expanding self-driving area (GoA2.0, 2.5), as well as timing

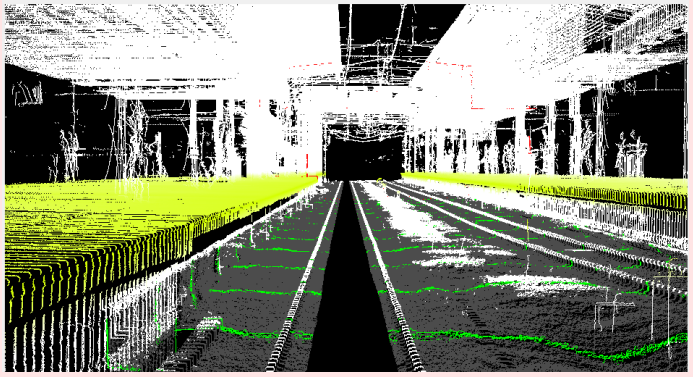
GoA2.0	Driver (license required) starts train, operates emergency stop, guides evacuation, etc.
GoA2.5	Attendant (no license required) operates emergency stop, guides evacuation, etc.

●Specific examples for consideration: Future maintenance

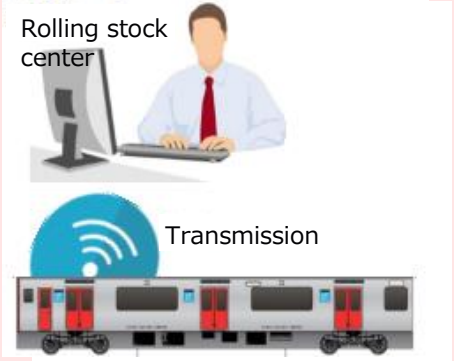
Use CBM* to minimize life cycle costs

Utilize sensing and monitoring technologies to accurately and frequently monitor rolling stock and ground equipment conditions (data).
⇒Abnormality detection and deterioration (failure) prediction based on analysis of accumulated data

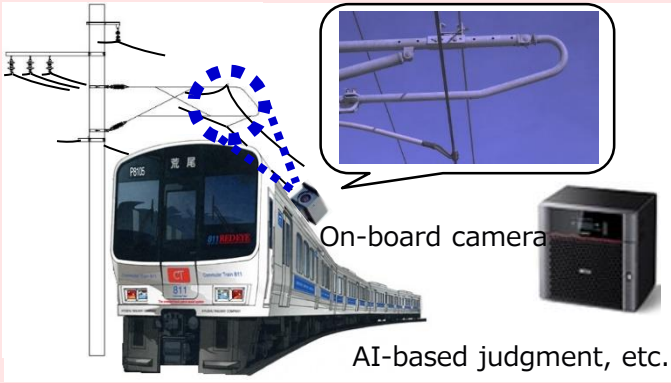
3D point cloud data of facilities around train lines



Ascertain the condition of rolling stock (equipment)



Use AI to monitor facilities around train lines

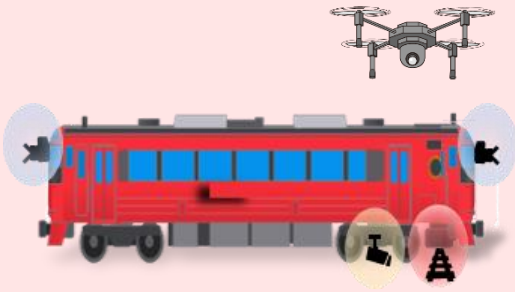


Use AI image analysis to check for loose bolts

*Condition-based maintenance

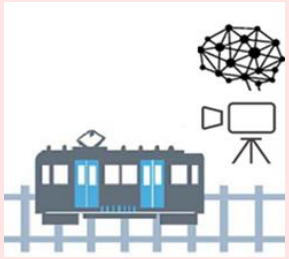
Improve productivity and safety through mechanization and labor savings

Use IoT and AI to improve productivity of inspections



Visual inspection
⇒Data acquisition by train, drone, etc. x AI-based decision making

Use AI to improve safety of in-track work



Train watching operations that require human attention
⇒Train watching operations that utilize AI

●Specific examples for consideration: Future facilities

Optimize railway assets with the latest infrastructure and state-of-the-art technology

	To date	Future Railway
Future stations	・Guidance provided by station staff and signage	・**Provide optimal guidance services using digital methods** ・**Provide information using the JR Kyushu app**
Future operating facilities	・High-cost train control system with wired connection ・Rolling stock powered by electricity or diesel	・**Use wireless technology to streamline train control systems** ・**Introduction of rolling stock utilizing next-generation energy technologies (storage batteries, fuel cells, etc.)**
Future business facilities	・Communication by phone, fax, etc.	・**Maximize the use of digital infrastructure**

3 The Post-Pandemic World and the Future Railway Project

●Specific examples for consideration: Future management of revenue and expenditures

・Planning to customize "amoeba management" for railways to conduct management accounting
・Aiming for full-scale operation in the next fiscal year or later after identifying issues through trial operation

Basis of initiatives

■Philosophy, policy, and approach
・Operational objective
・Ideas and action guidelines that should be valued in operations

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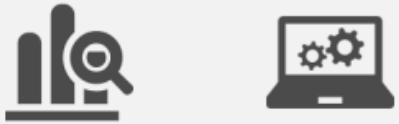
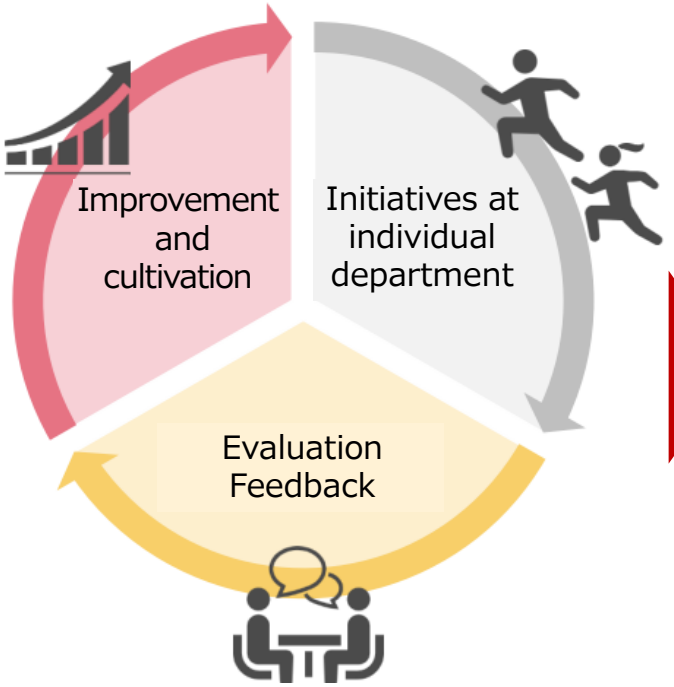
■ Framework
・Management of revenue and expenditures, system
・HR evaluation, training system



Utilization and improvement cycle

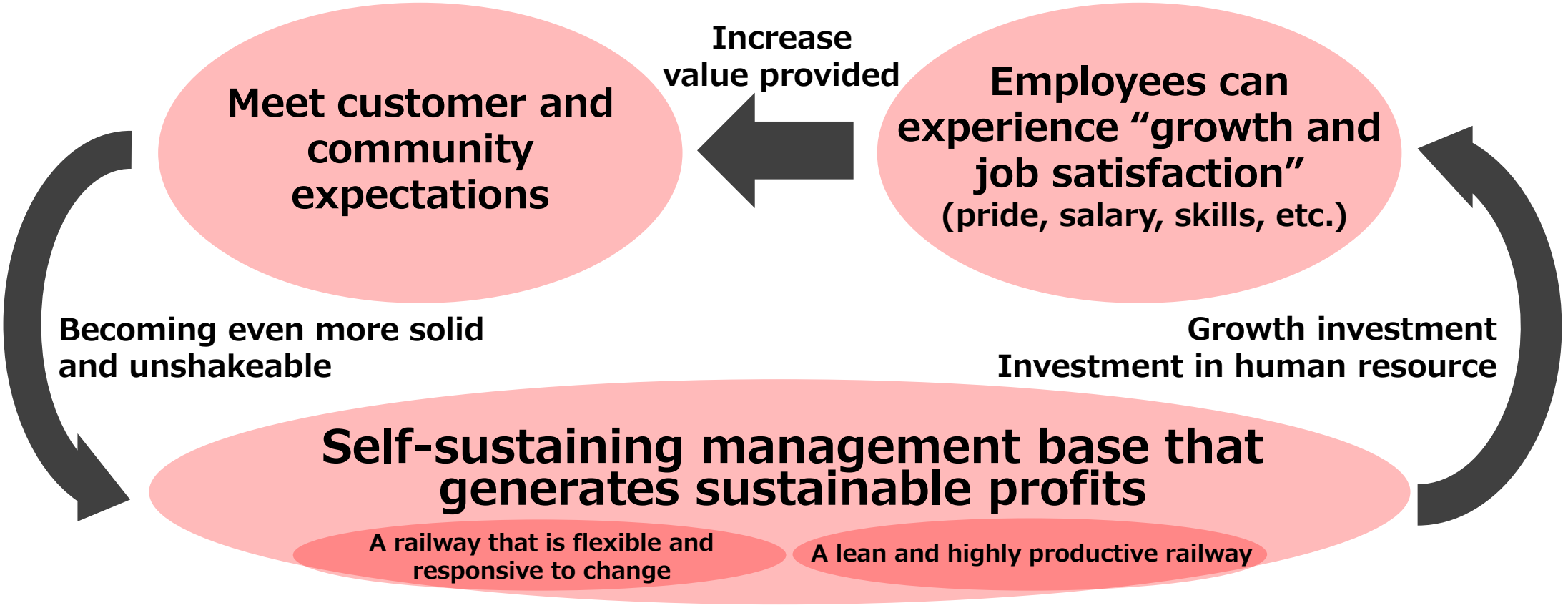


Ideal

Clarification of responsibility for income and expenditures, and efforts to improve profits and human resource development

Ideal for the Future Railway

"A self-sustaining management base and a virtuous cycle of growth"



Future earning methods (railway)	Future earning methods (near railways)	Future local lines	Future transportation systems	Future maintenance	Future facilities	Future Group companies	Future income/expense management	Future back office

Safety **Service**