

The 12th Medium-Term Management Plan T.RAD-12 (From FY2022 to FY2025)

May, 2022

T.RAD Co.,Ltd.

T.RAD-12 T.RAD Management Philosophy & Corporate Slogan & Medium-Term Strategies

T.RAD Management Philosophy

- T.RAD provides superior heat exchanger products and contributes to the evolution of society and environmental preservation with our technology and services
- T.RAD pursues the continuous prosperity of the company, coupled with happiness of its customers, shareholders, employees, suppliers, and the surrounding community

Corporate Slogan

- With the dream of ever-expanding thermal energy conversion technology
- Aiming to be the world's No. 1 heat exchanger manufacturer contributing to the realization of a carbon-neutral society

Strategies of the 12th Medium-Term Management Plan 【TRAD-12 Company Vision】

1. A Company that achieve carbon neutral
2. A Company that is continuously chosen by its satisfying customers
3. A Company trusted by its stakeholders
4. A Company that values human resources
5. A Company that achieve stable profitability
6. 5C+ 2S+ 3R

Basic Strategies 1. A Company that achieve carbon neutral



(1) Development, production, sales and promotion of **heat exchanger products for various power plants in the electrification era**



(2) Realization of energy-saving works by promoting the **downsizing of production lines** and utilizing natural energy



(3) Procurement of materials and parts **with low CO2 emissions** and promoting recycling



(4) Accelerated reduction of logistics by promoting the **completion of operations within the works** and the incorporation of external warehouses



(5) Construction and utilization of solutions that **improve both productivity and reduce CO2**

Basic Strategies 2. A Company that is continuously chosen by its satisfying customers



(1) Providing products with optimal quality trusted by customers



(2) Maintaining and securing a **production system for stable supply**



(3) Promoting T.RAD global sales and strengthening R&D



(4) Development and proposal of products that meet the changes and needs of customers, regions, and the environment due to **the deepening and evolution of heat exchange technology**



(5) Restructuring of the global production system through the optimization of production allocation and the promotion of local production for local consumption



(6) **Challenge for new business** (new energy conversion technology, manufacturing industry and IT etc.)

Basic Strategies 3. A Company trusted by its stakeholders



(1) Enhancement of corporate governance



(2) Enhancement of shareholder returns by increasing corporate value



(3) Growing together with suppliers
Expanding and strengthening collaborative activities in the supply chain

Basic Strategies 4. A Company that values human resources



(1) Pursuing zero accidents through employee health and safe production activities



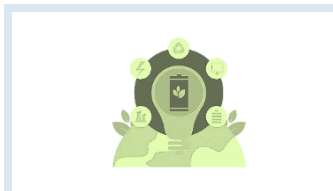
(2) Reforming work-style and improving the workplace environment



(3) Developing human resource through manufacturing

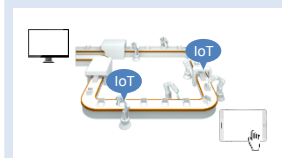


(4) Developing human resource of local management in overseas subsidiaries



(5) The creation of a work environment in which a diverse workforce can thrive and respect for human rights

Basic Strategies 5. A Company that achieve stable profitability



(1) Promoting cost reduction by productivity improvement (utilization of TPS, IoT, AI, etc.)



(2) Promoting cost reduction by global supply chain system construction and strengthening procurement capabilities



(3) Promoting manufacturing reform by realizing unrivaled products and unrivaled lines



(4) Pursuing vertical start-up of new mass-produced products by strengthening the mother factories management system



(5) Improving investment efficiency through stricter investment risk assessment and thorough monitoring



(6) Promoting business reform (DX) by utilizing IT technology

Basic Strategies 6. 5 C+ 2 S+ 3 R



(1) A culture that allows us to tackle new and challenging things



(2) Activities that do not fear changes in the surrounding environment or the need to change ourselves



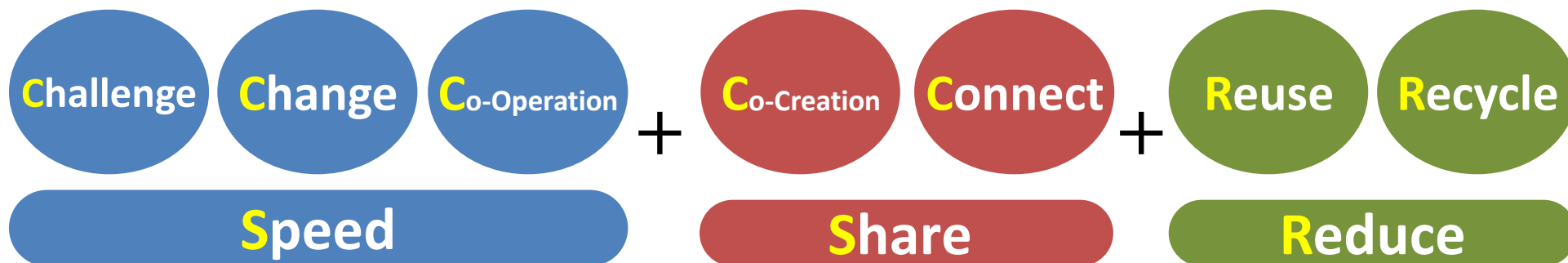
(3) Cross-departmental and cross-divisional communication and cooperation



(4) Activities attaching importance to speed



(5) Promotion of the 3Rs



T.RAD-12 Financial Targets

Financial Targets for FY2025 (ending March 31, 2026)

Net Sales

150.0

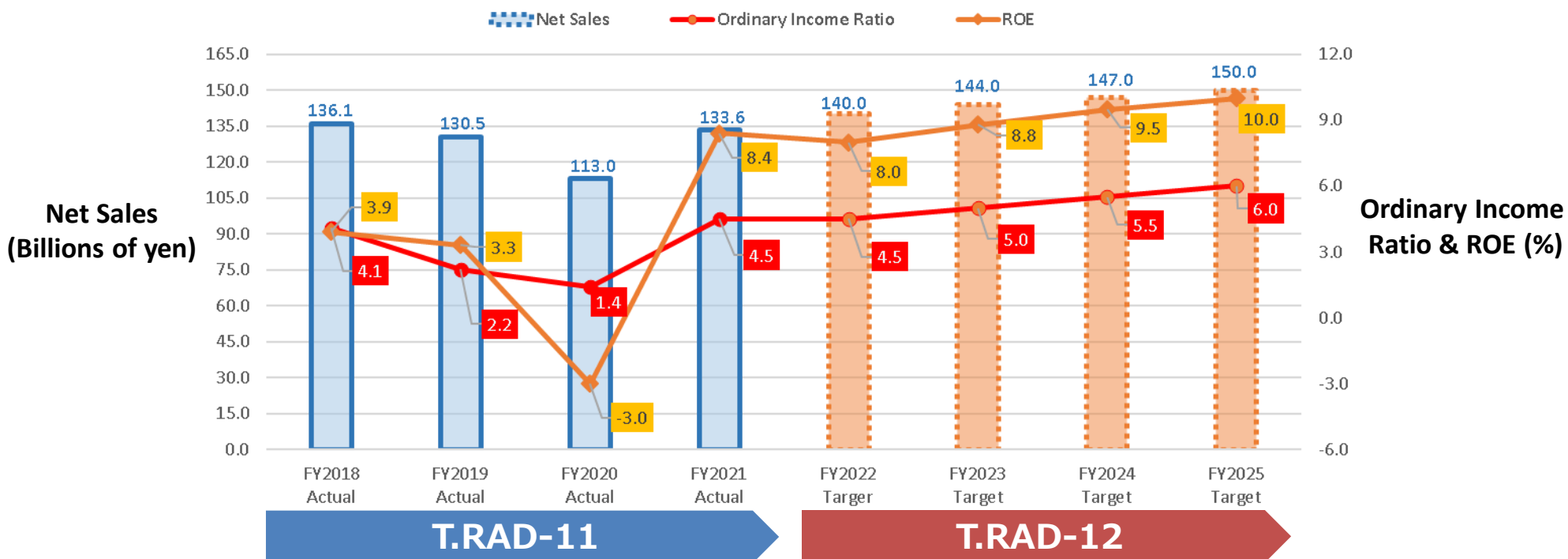
Billions of yen

Ordinary Income Ratio

6.0%

ROE

10.0%



T.RAD-12 Financial Targets

(Billions of Yen)

		T.RAD-11				T.RAD-12				
		Actual				Target	Forecast	Target		
		FY2018	FY2019	FY2020	FY2021	FY2022	FY2022	FY2023	FY2024	FY2025
Consolidated Total	Total Sales	136.1	130.5	113.0	133.6	140.0	158.4	144.0	147.0	150.0
	Ordinary Income	5.6	2.9	1.5	6.0	6.3	4.6	7.2	8.1	9.0
	Ordinary Income Ratio	4.1%	2.2%	1.4%	4.5%	4.5%	2.9%	5.0%	5.5%	6.0%
	ROE	3.9%	3.3%	-3.0%	8.4%	8.0%	3.4%	8.8%	9.5%	10.0%
Domestic Total	Total Sales	66.8	63.5	56.3	68.3	65.0	77.0	67.0	69.0	70.0
	Ordinary Income	3.5	2.8	2.9	5.5	2.8	4.9	3.0	3.3	3.8
	Ordinary Income Ratio	5.3%	4.5%	5.2%	8.0%	4.3%	6.4%	4.5%	4.8%	5.4%
Overseas Total	Total Sales	78.7	77.4	65.3	77.1	82.0	92.0	84.0	85.0	87.0
	Ordinary Income	4.4	3.5	2.0	4.1	6.6	2.3	7.3	7.9	8.3
	Ordinary Income Ratio	5.6%	4.5%	3.0%	5.3%	8.0%	2.5%	8.7%	9.3%	9.5%

※Consolidated Total = Domestic Subsidiaries, Consolidated Elimination, Equity in earnings of affiliates are included

	USD	EUR	RUB	THB	RMB	IDR	VND
FY2021	115.02	130.52	1.55	3.43	18.07	0.0081	0.0051
FY2022 Forecast	125.2	136.21	1.46	3.73	19.62	0.0087	0.0055
T.RAD-12 (FY2022 to FY2025) Targets	109.2	132.71	1.48	3.49	16.99	0.0076	0.0047

TRAD's commitment to "Carbon Neutral"

Supply various heat exchangers for various power plant

1. For the electrification era

FCEV



e-fuel

EV

PHV

HEV

CO2 reduction in manufacturing and transporting process

2. CO2 reduction in each process



CO2 reduction solutions by TRAD's technology

3. Contributing to the global CO2 emission



Target

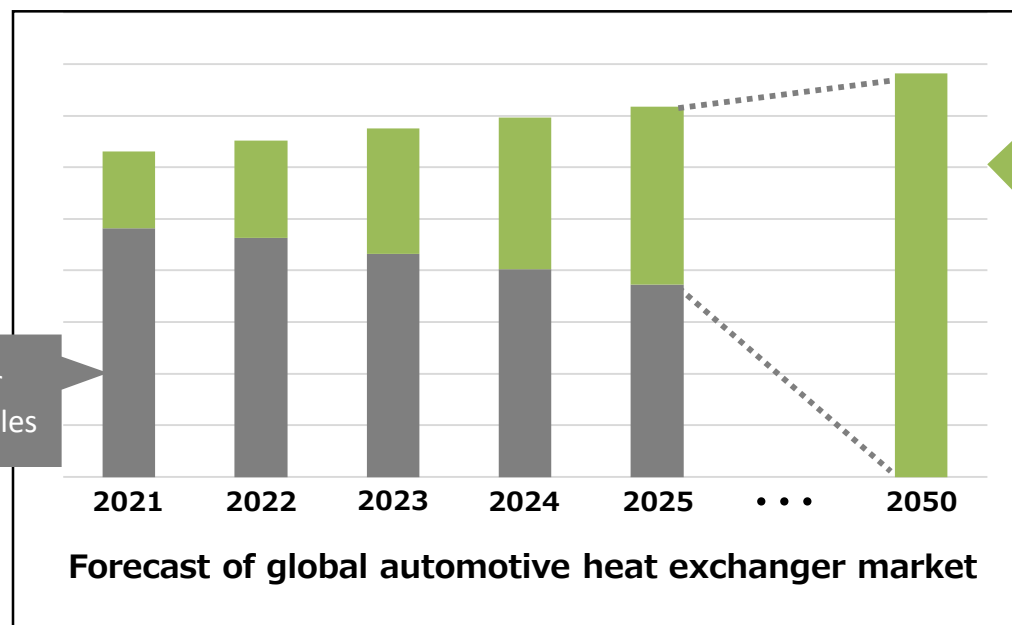
- To **reduce** CO2 emissions **by 3% every year**
- To achieve "Carbon Neutral" **in 2050**

1. A Company that achieve carbon neutral

(1) Development, production, sales and promotion of heat exchanger products for various power plants in the electrification era

As a heat exchanger manufacturer in the carbon neutral (CN) era

By 2050, all heat exchangers sold by T.RAD will be products for CN vehicles



Conventional heat exchangers for internal combustion engine vehicles

Heat exchangers for CN vehicles

Energy used

Electricity Hydrogen e-fuel

Power plant configuration

HEV EV FCEV
PHV

- There are various engine options in the CN era, such as EVs, FCEVs, hydrogen engines, and e-fuel engines. In any case, **all power plants require heat exchangers**
- Developing and providing **unrivaled products** with overwhelming functions and cost competitiveness in the expanding heat exchanger market

(2) Realization of energy-saving works by promoting the downsizing of production lines and utilizing natural energy

Aiming to realize an "energy-saving factory"



Solar power generation



- Approx. **30%** of the electricity covered by solar power system

Air conditioning system with groundwater & products



- **Factory that is friendly to both humans and nature** with a new air conditioning system



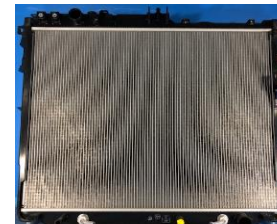
Using the new factory as a model, we will promote converting our conventional factory to **energy-saving factory** on a global scale.

(3) Procurement of materials and parts with low CO2 emissions and promoting recycling-1)

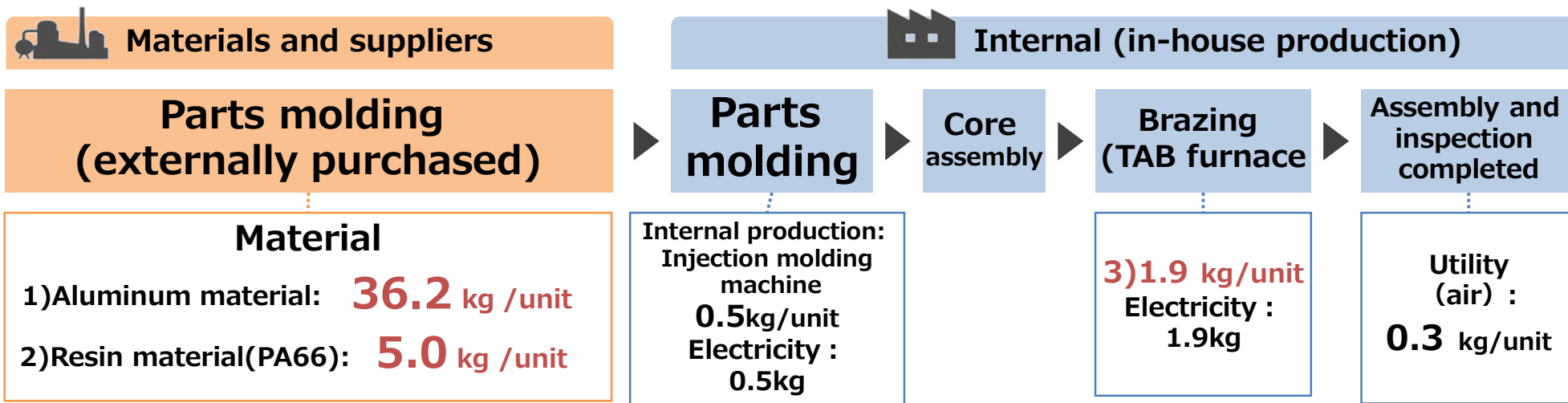
【Concept of CO2 reduction activities】

《In the case of each radiator manufactured using aluminum, our main material》

- Approximately 44 kg/unit of CO2 is generated in the manufacturing process.
- The following processes 1), 2), and 3), in particular, have a large volume of emissions.



- 《 Representative: Aluminum large RAD 》
- Weight: 4.1 kg
 - Black part: Resin
 - Silver part: Aluminum



Externally made: Approx. 93%

In-house production: Approx. 7%

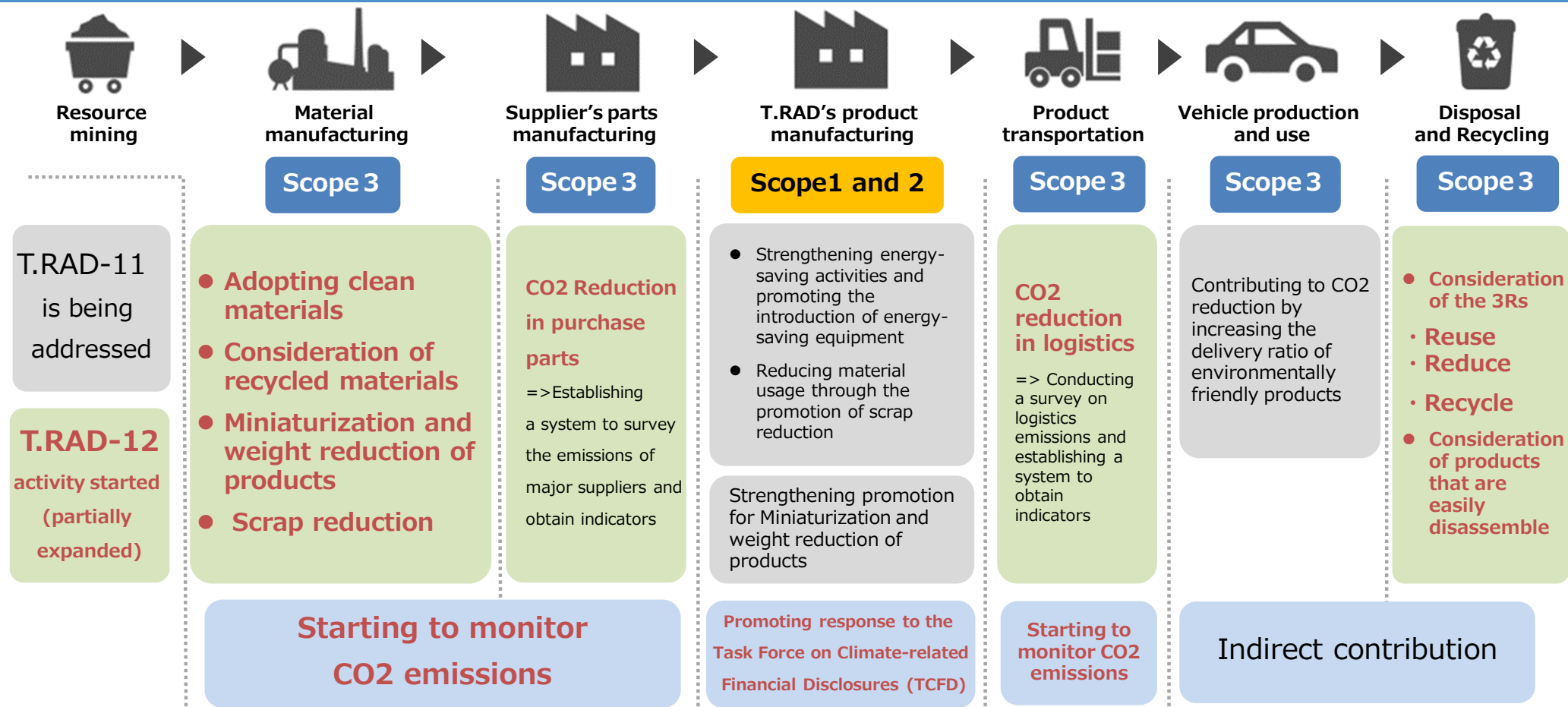
(LCA)CO2 emission ratio

*The amount of CO2 emissions from purchased parts, in-house processing, distribution, etc. is partially unidentified.

*Apportionment based on the total volume of factories/processes, according to JAPIA.

1. A Company that achieve carbon neutral

(3) Procurement of materials and parts with low CO2 emissions and promoting recycling-2)



Scope 1 : Direct greenhouse gas emissions by businesses (e.g., fuel combustion and industrial processes)

Scope 2 : Indirect emissions associated with the use of electricity, heat, or steam supplied by other companies
(e.g., using electricity from electric power producers)

Scope 3 : Indirect emissions other than Scopes 1 and 2 (emissions by other companies related to the activities of the businesses)

1. A Company that achieve carbon neutral

(3) Procurement of materials and parts with low CO2 emissions and promoting recycling-3)

Concept and goals for the implementation of carbon-neutral (CO2 reduction) activities

Most CO2 emissions up to the completion of the product are from the **manufacturing process of aluminum material, the main material (Scope3)**



Key Activities in T.RAD-12

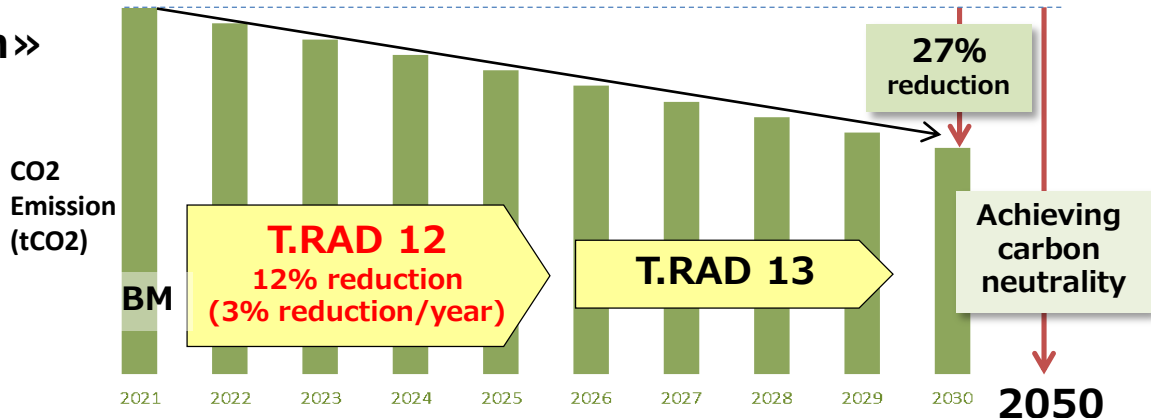
We are studying ways to reduce CO2 emissions in the manufacturing process of **aluminum materials** and conducting activities to reduce CO2 emissions during our production activities

Adopting clean materials	Development of materials using recycled materials	Miniaturization and weight reduction of products	Reduction of scrap
--------------------------	---	--	--------------------

«Target of CO2 emission reduction»

2030 Target

Entire life cycle assessment (Scope1, 2 and 3)
27% reduction from the FY2021 level (3% reduction/year)



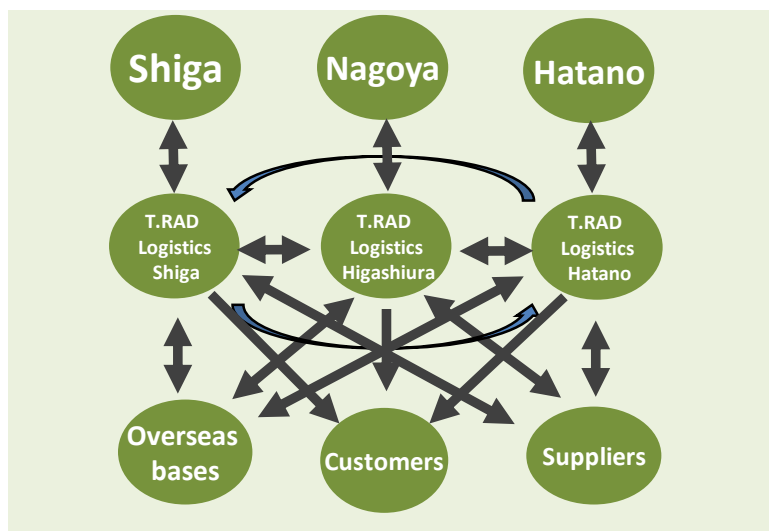
(4) Accelerated reduction of logistics by promoting the completion of operations within the works and the incorporation of external warehouses

1) Promoting optimal logistics throughout the entire supply chain (including onsite logistics)

- Establishment of optimal logistics through the coordination of production and logistics information
- Improvements in the efficiency of logistics through the use of **AI and IoT**

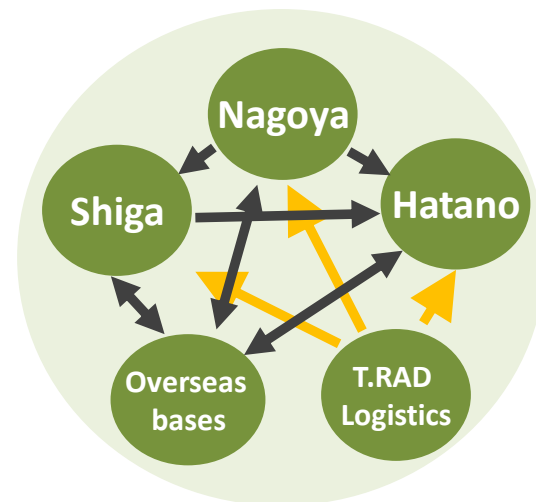


Total optimization of supply chain management (SCM) from the procurement of raw materials to product delivery to customers



2) Minimizing and optimizing external warehouses

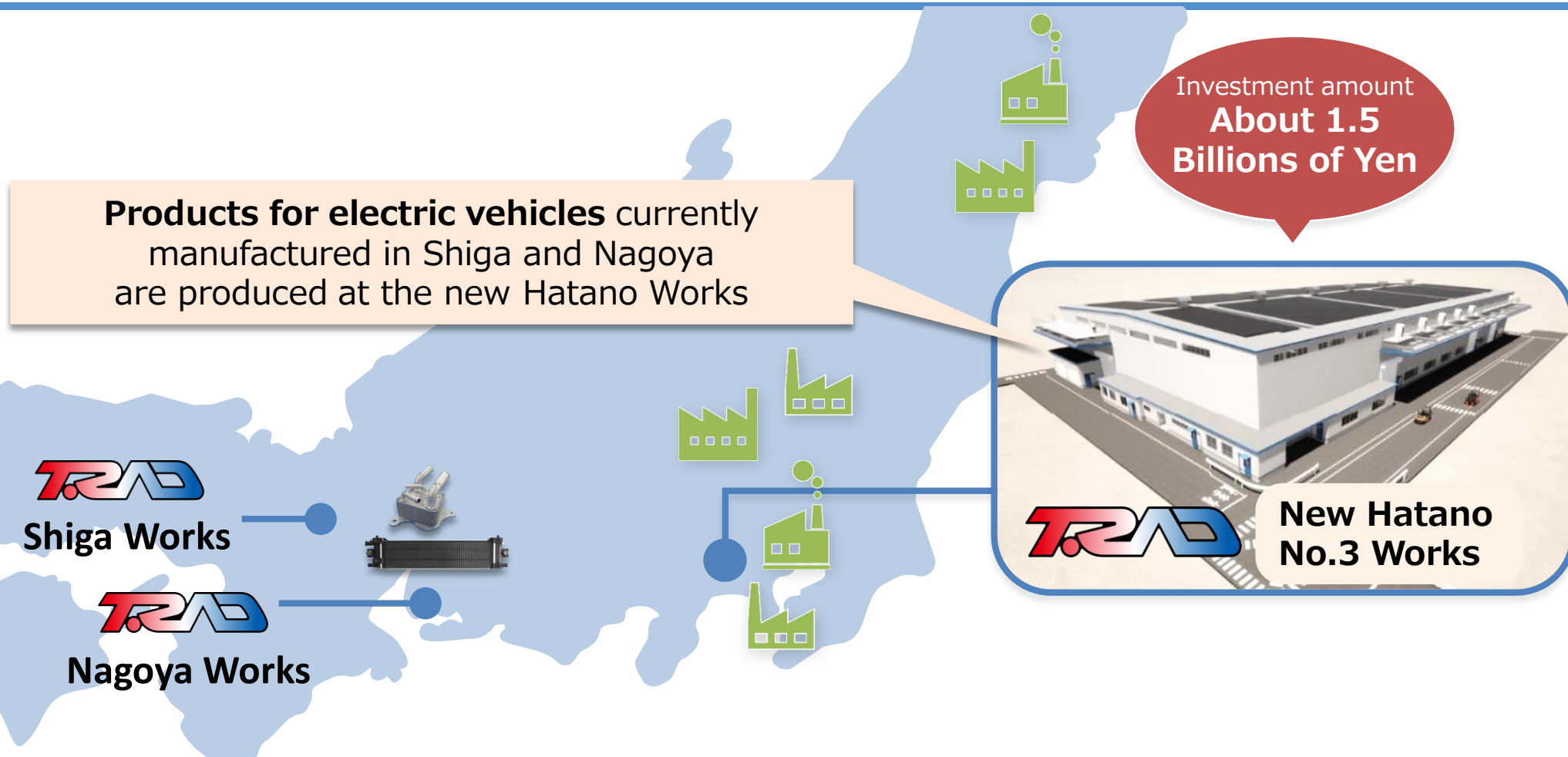
- Reduction of distribution losses by incorporating external warehouses into works
- Promoting improved transportation efficiency through relay transportation



Product consolidation
 Internalization of external warehouses

1. A Company that achieve carbon neutral

Expansion of production base for products for electric vehicles: Construction of new Hatano Works (completed in March 2022)

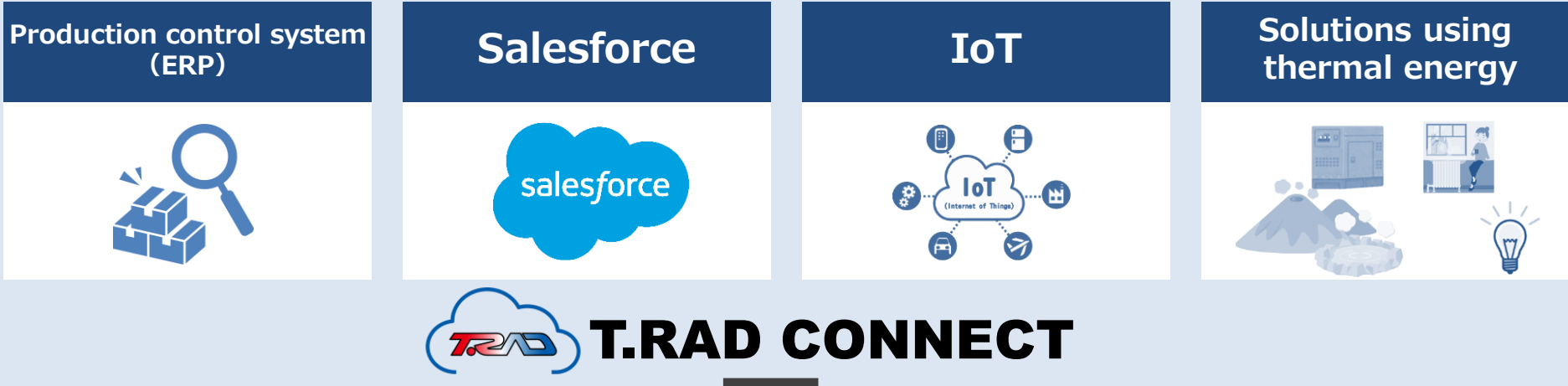


- Expansion of production systems for products for electric vehicles
- Reducing the transportation distance of products to customers in eastern Japan, thus **reducing transportation costs and CO2**

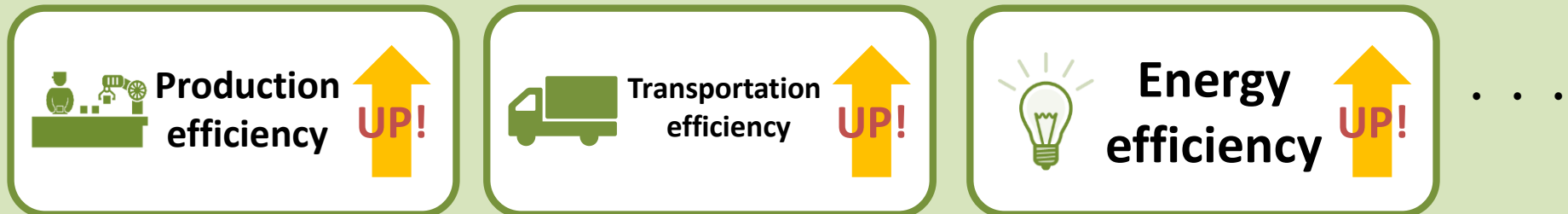
1. A Company that achieve carbon neutral

(5) Construction and utilization of solutions that improve both productivity and reduce CO2

Technology and know-how of T.RAD as a manufacturing company



Improved productivity and efficiency through the use of T.RAD CONNECT (IT)



➔ **Contributing to reduce CO2 emissions**

(1) Providing products with optimal quality trusted by customers

Achieving the optimal quality of heat exchanger products for diverse powertrains

- Research and basic R&D, model development, production preparation, quality build-up, and monitoring through initial flow control

Preventing the recurrence of quality problems (domestic and overseas)

- Enhanced true cause analysis based on track records and eliminating human factors through the use of AI and IoT

Establishing a global quality assurance system (for domestic and overseas subsidiaries)

- Establishing a global quality system by correlating quality information (on business partners, production, equipment, performance, etc.) with various information on T.RAD CONNECT

Developing suppliers and maturing the quality of purchased goods in coordination with supply chains and global material procurement

Human resource development [Design, evaluation, and quality improvement]

- Education on quality methods (SQC*, multivariate analysis, reliability, FMEA*, etc.) through manufacturing

*SQC = Statistical Quality Control

*FMEA = Failure Mode and Effects Analysis

(2) Maintaining and securing a production system for stable supply

Establishment of a system to avoid component supply risks in supply chains

【Preparation for risk reduction】

- Systematic construction of a product configuration tree list (including computerization)
- Consolidation of supplier information and establishment of a mechanism for internal information deployment
- Promotion of suppliers' disaster mitigation activities
- Optimal inventory considering target recovery time
- Planning and implementation of training plans for emergencies
- Reduction of transportation costs and time by promoting local production for local consumption



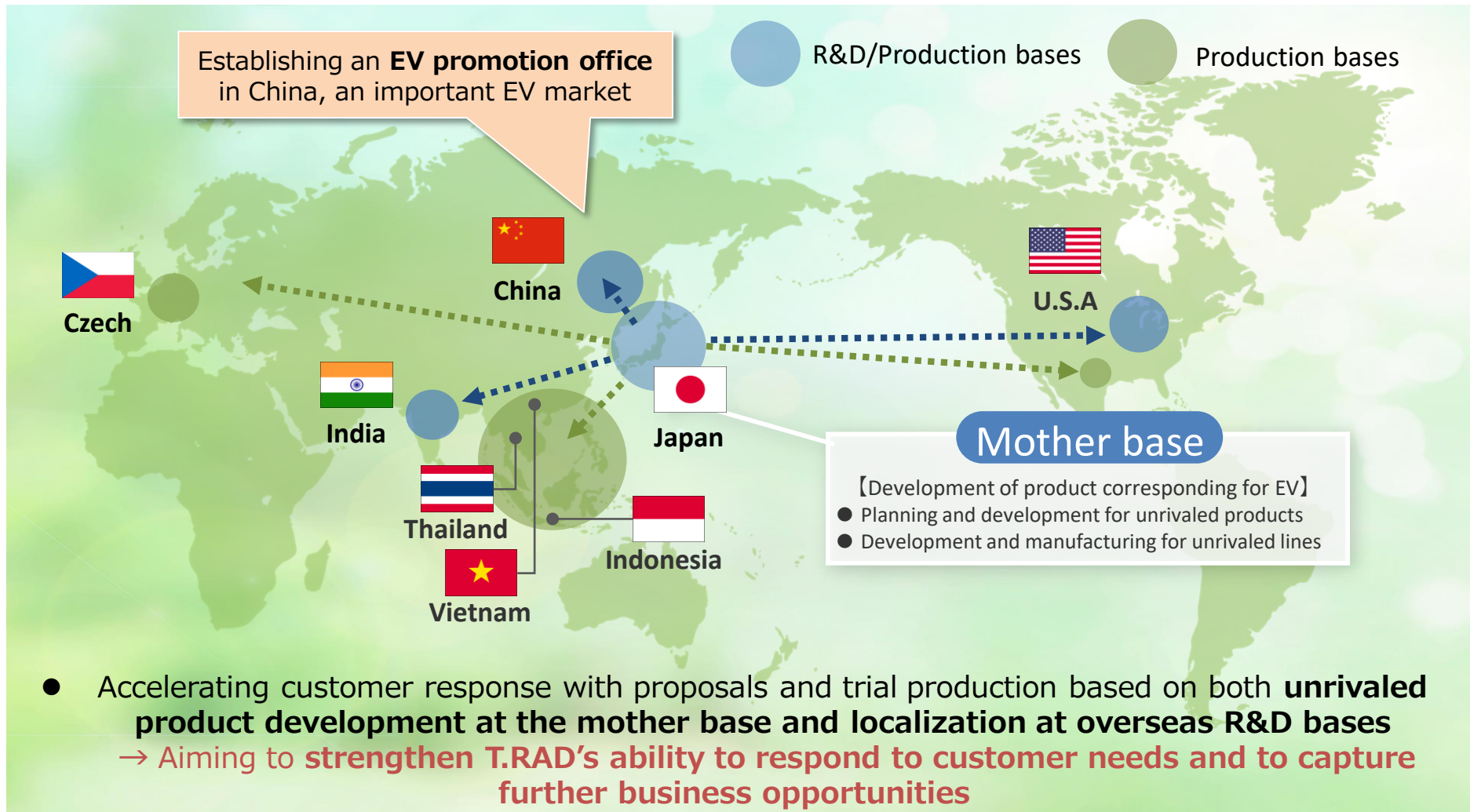
- Consideration and implementation of clarifying problems with alternative suppliers
- Consideration of global alternative procurement in case of emergency



Realization of stable parts supply

(3) Promoting T.RAD global sales and strengthening R&D

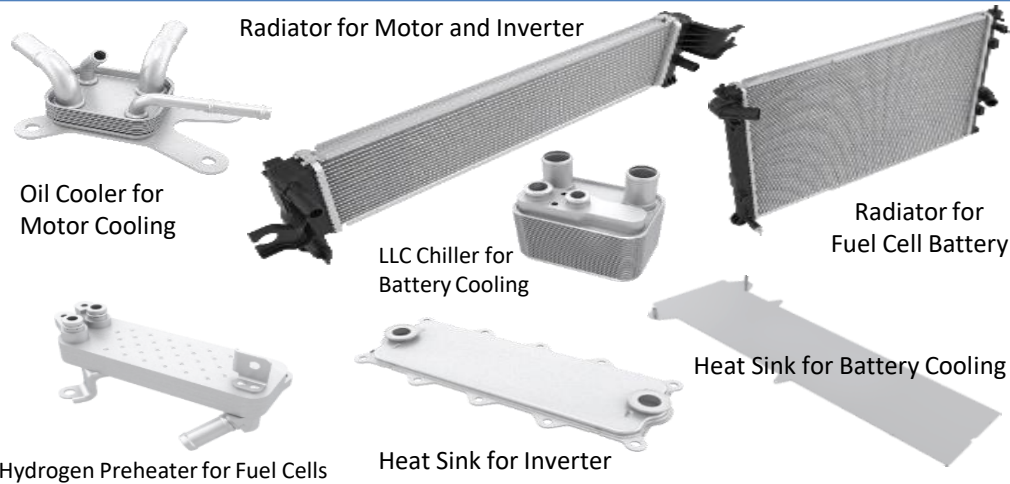
Strengthening R&D* structure for electrification business expansion and global deployment



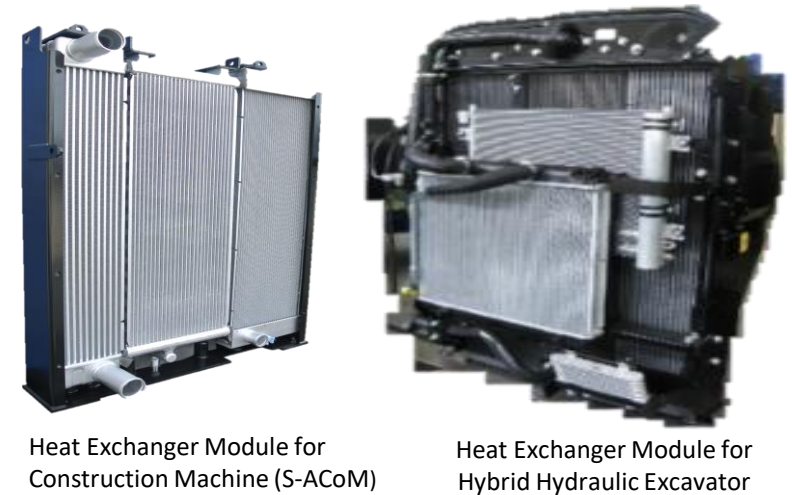
(4) Development and proposal of products that meet the changes and needs of customers, regions, and the environment due to the deepening and evolution of heat exchange technology

Development and provision of diverse products that match the latest needs

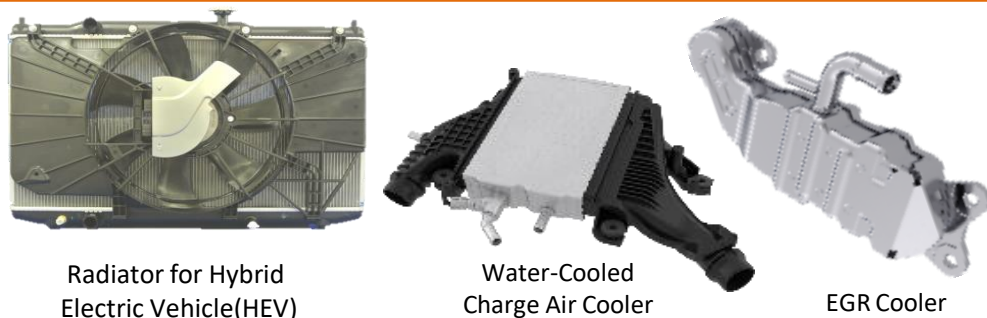
Heat Exchanger for Battery Electric Vehicles(BEV) and Fuel Cell Electric Vehicles(FCEV)



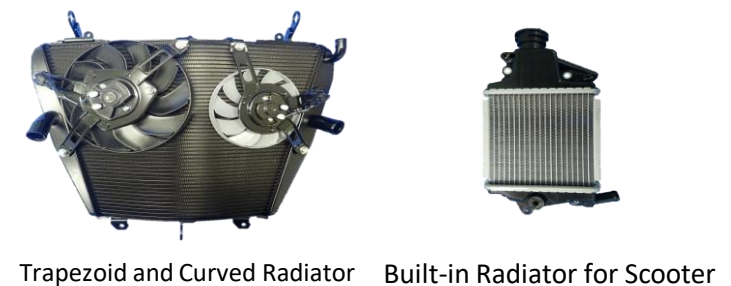
Heat Exchanger for Construction Machines



Heat Exchanger for Hybrid Electric Vehicles(HEV)



Heat Exchanger for Motorcycles



(5) Restructuring of the global production system through the optimization of production allocation and the promotion of local production for local consumption- 1)

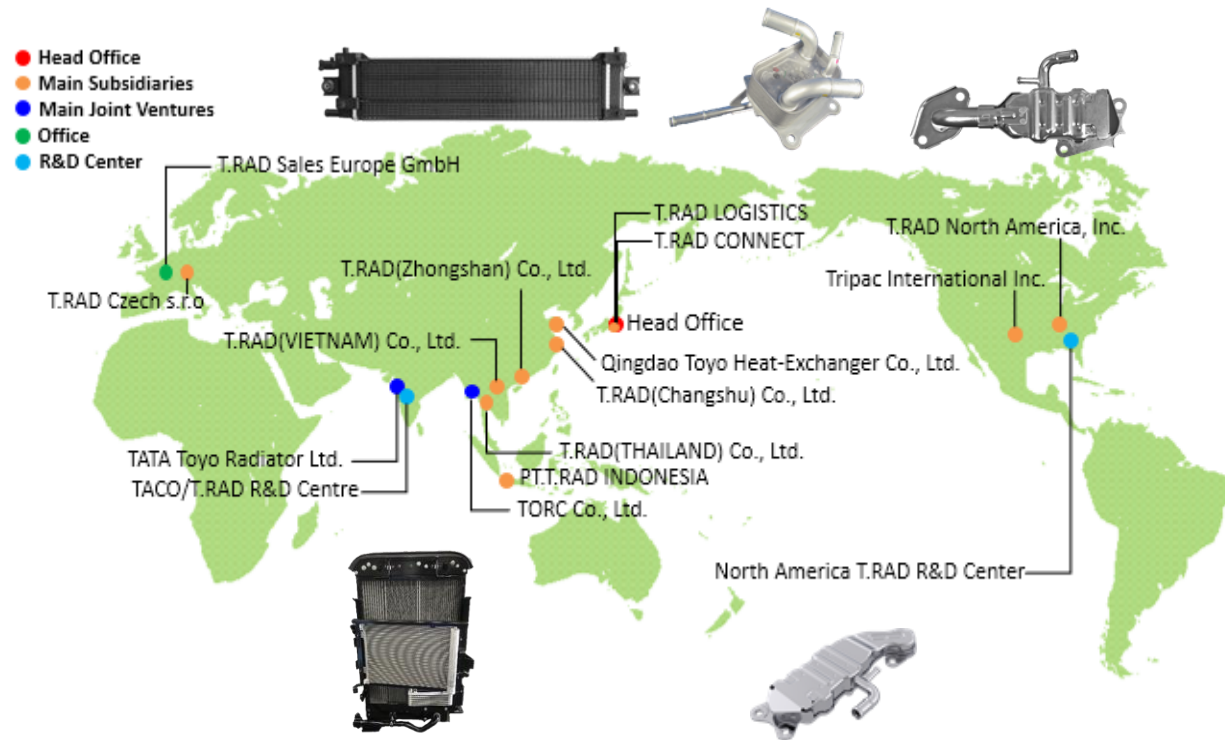
Restructuring of the Global Production System

Opportunities increased by electrification

Optimization of Production Allocation

Manufacturing technology conditions are created at product mother

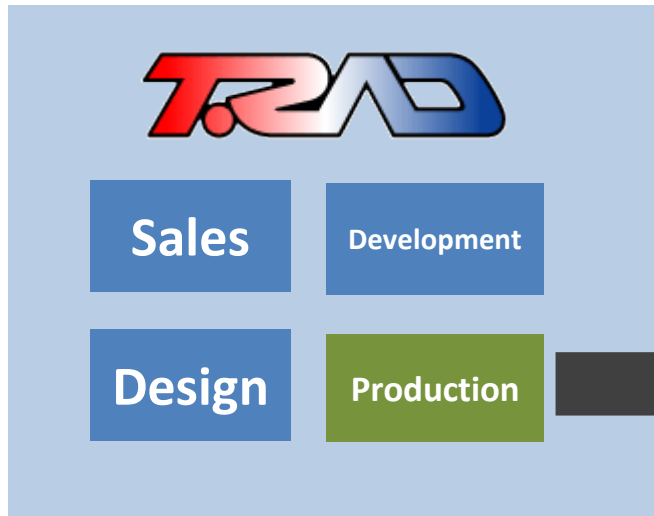
Deployed at each site



- Effectively using ALL TRAD's resources for opportunities increased by electrification
- Manufacturing technology conditions are created at each product mother and deployed at each site

(5) Restructuring of the global production system through the optimization of production allocation and the promotion of local production for local consumption- 2)

Considering and promoting the introduction of a fables production system



Production

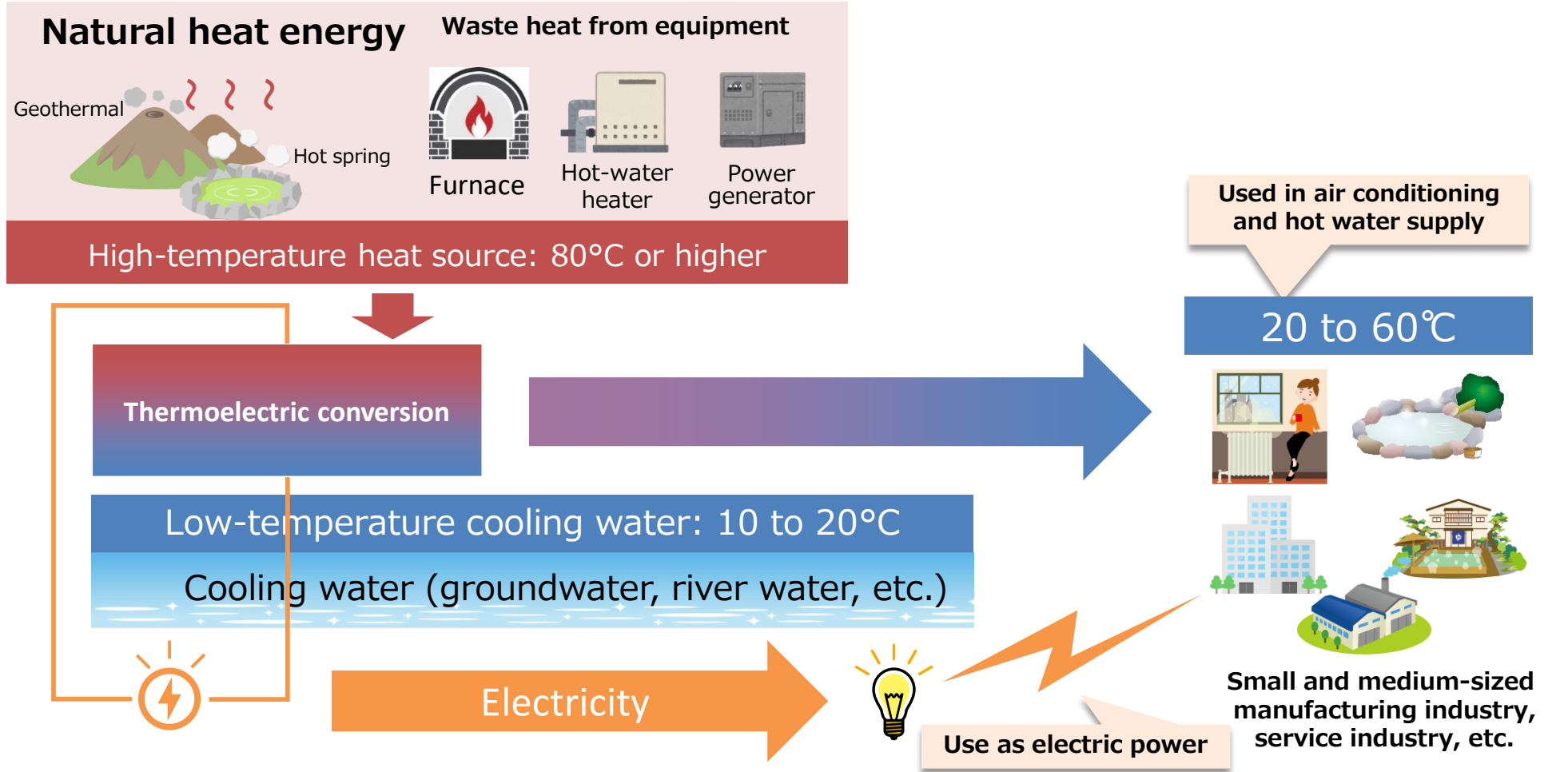
Customers and subcontractors

- A mother management system that manages data through IoT to grasp the actual status of production and quality in real time
- Prevention of technical knowledge and information leakage through the introduction of automated equipment

- No investment is required for new or expanded production plants
- Concentrating on product R&D, marketing, and other operations to speedily develop and propose products
- Using in-house equipment to promote the accumulation of technology with automated and compact equipment
- Capable of quickly identifying changes in the market and making decisions on production expansion or contraction

→ Providing high-quality products at a low cost to expand market share

(6) Challenge for new business (new energy conversion technology, manufacturing industry and IT etc.)



Application of heat exchange technology to utilize natural thermal energy and exhaust heat for energy conservation

(6) Challenge for new business (new energy conversion technology, manufacturing industry and IT etc.)

Technology and know-how of T.RAD as a manufacturing company

<p>Production control system (ERP)</p>	<p>Salesforce</p>	<p>IoT</p>	<p>Solutions using thermal energy</p>
--	-------------------	------------	---------------------------------------

T.RAD CONNECT

Provision of IT and CO2 reduction solutions to the world



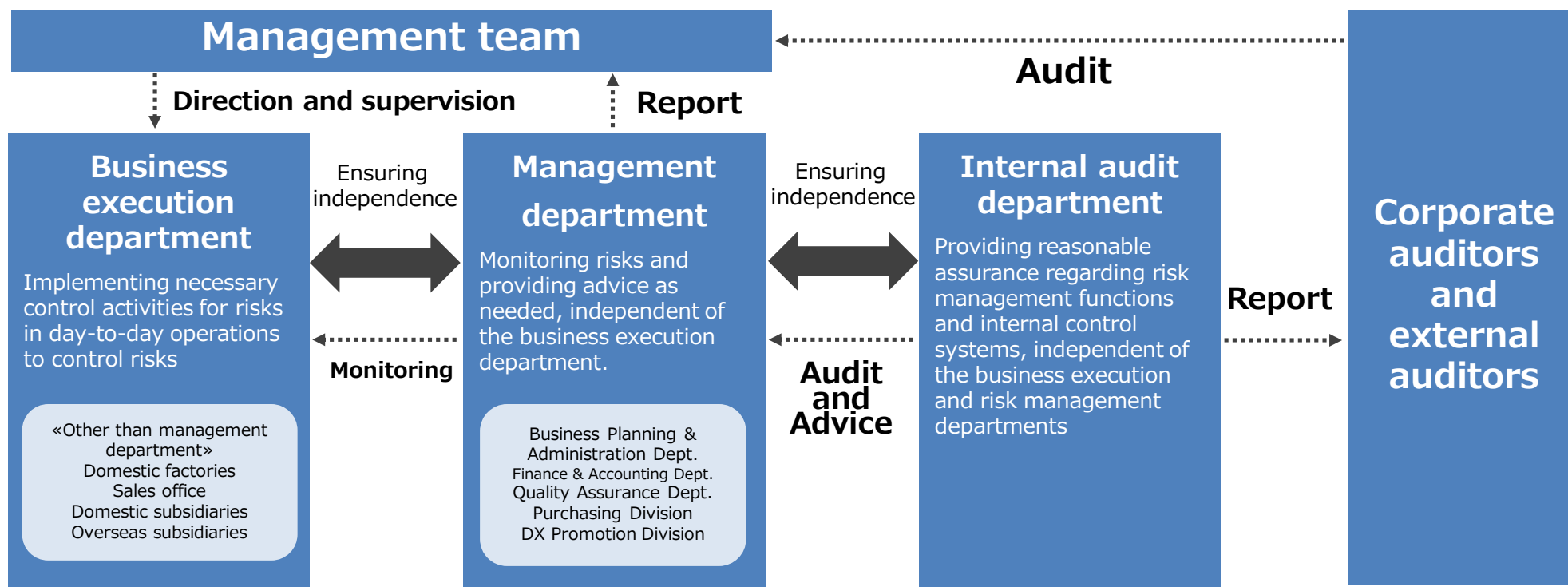
Small and medium-sized manufacturing industry all over the world, service industry etc.

(1) Enhancement of corporate governance

1) Establishment and operation of internal control systems

Appropriately manage risks to increase the Group's medium- to long-term corporate value in line with globalization.

- Establishing and operating an internal control system with a three-tier defense consisting of the business execution, management, and internal audit departments



Hardware aspects: Infrastructure building through rule development and IT utilization
 Software aspects: Fostering and spreading compliance awareness on site

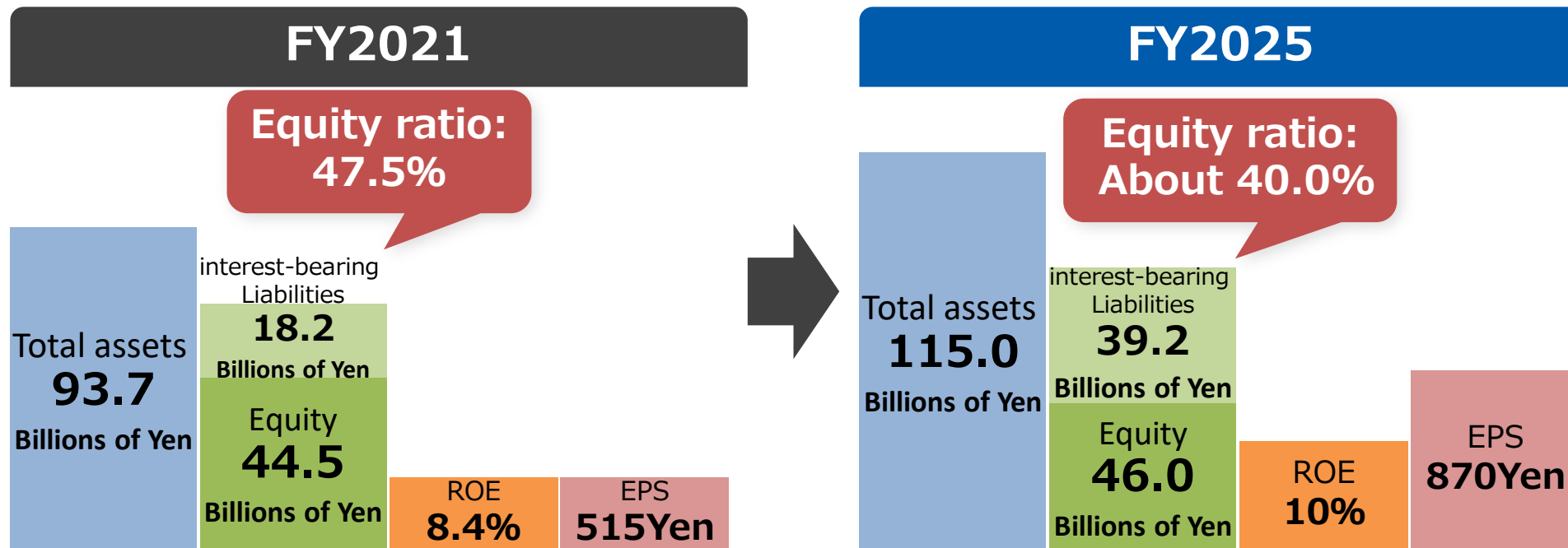
(1) Enhancement of corporate governance

2) Promoting information disclosure of Task force on Climate-related Financial Disclosures (TCFD)

Contents	Issues to be addressed in the future						
Recommending disclosure with specific scenario analysis on climate change	<ol style="list-style-type: none"> 1) Actual and potential impact on climate-related risks and opportunities <ul style="list-style-type: none"> ● Correlating with corporate strategy and finance ● Decisions on investment, financing, underwriting decisions, etc. 2) Medium- to long-term strategic scenario analysis <ul style="list-style-type: none"> ● 2°C scenario: Understanding the impact of transition risks and opportunities, with measures to address them ● 4°C scenario: Identification of physical risks and opportunities, with measures to address them 3) Understanding the impact of financial compensation risks, etc. for 1) and 2), and disclosing response measures and a supervision system for corporate management <table border="1" data-bbox="462 996 1970 1279"> <tbody> <tr> <td data-bbox="462 996 706 1093">Transition risks</td> <td data-bbox="706 996 1970 1093">Risks posed to the revaluation of financial assets with significant greenhouse gas (GHG) emissions as we transition to a low-carbon economy</td> </tr> <tr> <td data-bbox="462 1093 706 1182">Physical risks</td> <td data-bbox="706 1093 1970 1182">Direct impacts, such as property damage caused by floods, windstorms, and other weather-related projects, and indirect impacts, such as global supply chain disruptions and resource depletion</td> </tr> <tr> <td data-bbox="462 1182 706 1279">Liability risk</td> <td data-bbox="706 1182 1970 1279">Risks created by parties suffering losses due to climate change seeking to hold others liable for compensation and recovery</td> </tr> </tbody> </table>	Transition risks	Risks posed to the revaluation of financial assets with significant greenhouse gas (GHG) emissions as we transition to a low-carbon economy	Physical risks	Direct impacts, such as property damage caused by floods, windstorms, and other weather-related projects, and indirect impacts, such as global supply chain disruptions and resource depletion	Liability risk	Risks created by parties suffering losses due to climate change seeking to hold others liable for compensation and recovery
Transition risks	Risks posed to the revaluation of financial assets with significant greenhouse gas (GHG) emissions as we transition to a low-carbon economy						
Physical risks	Direct impacts, such as property damage caused by floods, windstorms, and other weather-related projects, and indirect impacts, such as global supply chain disruptions and resource depletion						
Liability risk	Risks created by parties suffering losses due to climate change seeking to hold others liable for compensation and recovery						

(2) Enhancement of shareholder returns by increasing corporate value

1) Target balance sheet image



We aim to achieve **a consolidated ROE of 10%** while maintaining the **consolidated equity ratio at 40% or higher** by strengthening the corporate profitability by achieving the target items of the 12th Mid-Term Management Plan (T.RAD-12) and through an aggressive investment policy.

(2) Enhancement of shareholder returns by increasing corporate value

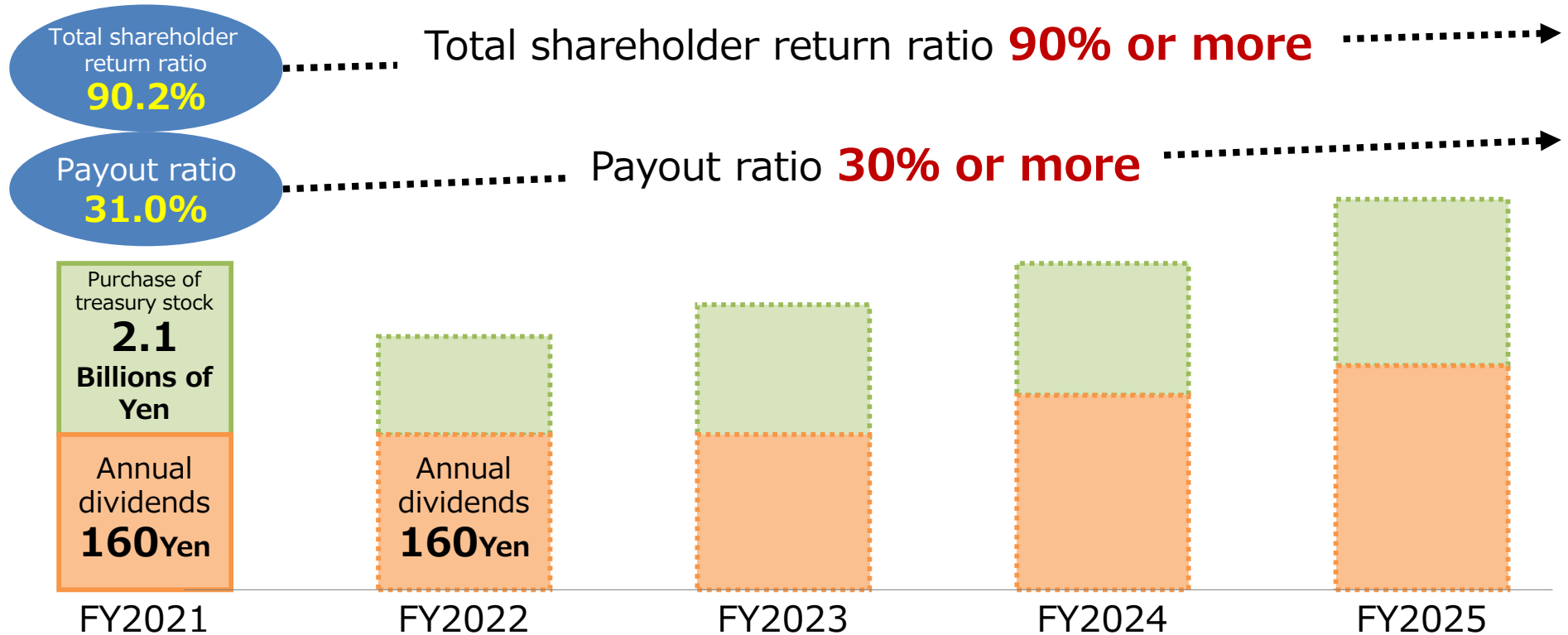
2) Capital allocation image <<Four-year cumulative total for the period from the fiscal year ending March 31, 2023 to the fiscal year ending March 31, 2026>>

Cash flows from operating activities + Loans payable 61.2 Billions of Yen	Total Growth investments 50.7 Billions of Yen	Electrification	12.0 Billions of Yen	
		New orders/Increased production	8.0 Billions of Yen	
		Renewal and maintenance of facilities	11.0 Billions of Yen	
		DX and environment	4.5 Billions of Yen	
		Strategic investments	New plant and M&A	13.7 Billions of Yen
			New businesses *10% investment of the net income	1.5 Billions of Yen
	Total Shareholder returns 10.5 Billions of Yen	Purchase of treasury stock	10.5 Billions of Yen	
	Dividends			

- We aim to achieve **investments in growth and shareholder returns** through appropriate capital policies.
- We will **invest in further strengthening our competitiveness (technology and productivity)** in areas, including our electrification, DX, and environment. Furthermore, we will **invest in the renewal and maintenance of existing facilities** to secure our earnings base.
- In addition, we will make strategic investments in new plant construction, M&A, and new businesses that will lead to future growth.

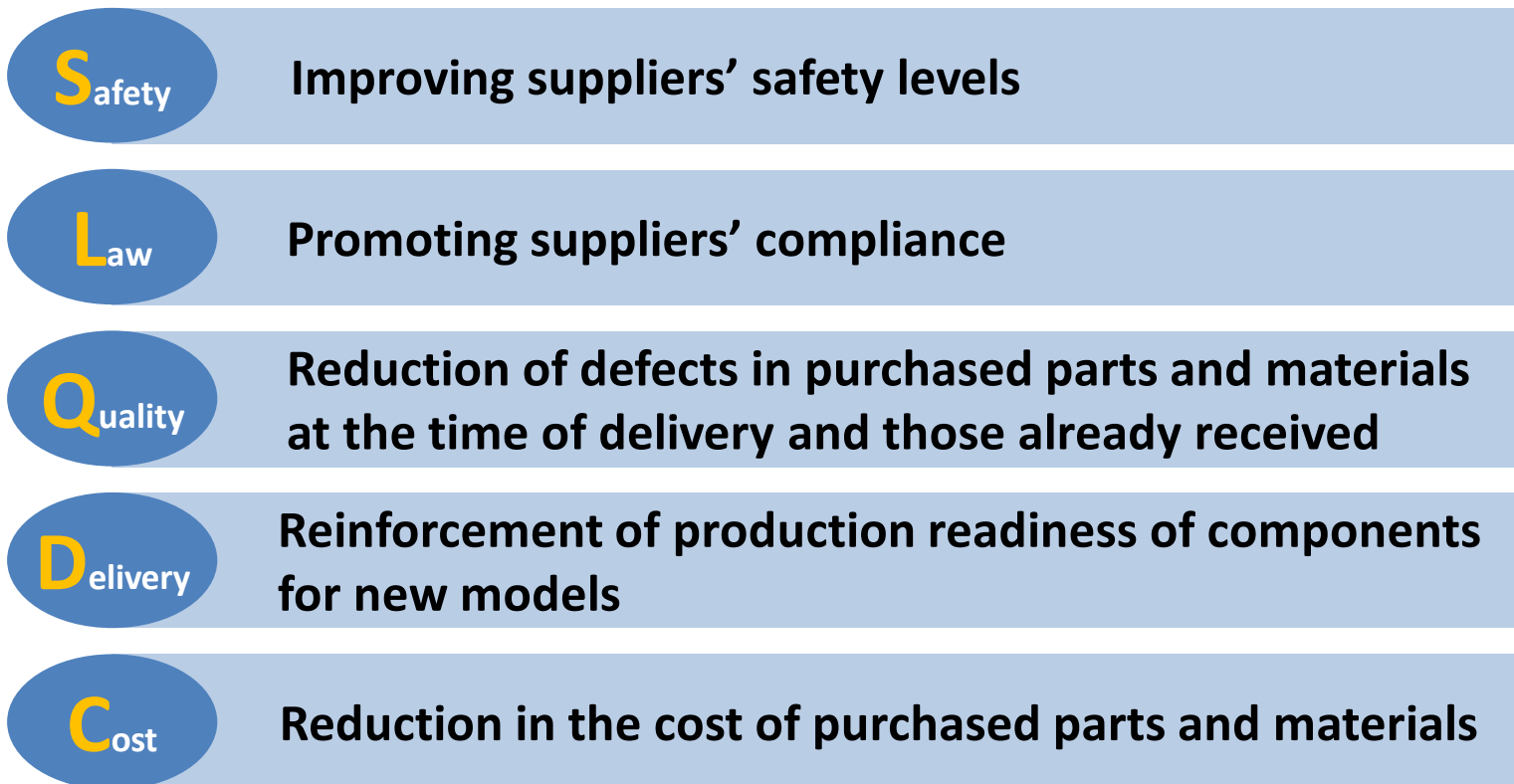
(2) Enhancement of shareholder returns by increasing corporate value

3) Dividends & Purchase of treasury stock



- While maintaining financial soundness and making investments for growth, we will flexibly purchase treasury shares by considering the quarterly business performance, and we will strengthen the shareholder returns, aiming for **a dividend payout ratio of at least 30% and a total shareholder return ratio of at least 90%**.
- The remaining 10% will be used for **new businesses and other strategic investments**.

(3) Growing together with suppliers (expanding and strengthening collaborative activities in the supply chain)



+

- Promoting CO2 reduction activities for purchased parts
- Sharing problems with suppliers and promoting activities to improve communications to resolve problems
- Making effective use of the T.RAD Supplier Portal to improve operational efficiency together with suppliers

4. A Company that values human resources

(1) Pursuing zero accidents through employee health and safe production activities

T.RAD aims to be **a company that values people** by pursuing the happiness of its employees and their families, based on the basic philosophy that **health and safety are the highest priority in all of its activities.**

1) Strengthening the Safety-first Principle

- Reviewing T.RAD's safety and health promotion system, focusing on its efforts toward simple activities.
- Raising T.RAD's level of disaster prevention measures at all sites by horizontally deploying them and further strengthening its efforts to build and improve workplace environments at all its bases.

2) Strengthening health and hygiene activities in response to the COVID-19 pandemic

- Exploring new ways of working in the With/After COVID-19 era.
- Continuously standardizing and improving the level of infection prevention measures being taken at all locations.

- Creating a workplace with **5S keywords (Sort, Set in order, Shine, Standardize, Sustain)**
 - Achieving **good communication** among workers
- Striving to **ensure and promote T.RAD employees' mental and physical health** on a daily basis through efforts including those listed above and promoting **activities to maintain and improve a safe and comfortable work environment.**

(2) Reforming work-style and improving the workplace environment

Shifting to a **personnel system that will be fairer and more convincing**, rewarding those who work hard and produce results. Furthermore, promoting work-style reforms and improving the workplace environment by **enhancing productivity through IT and other means**.

Personnel system and evaluation system reforms

Establishing a **fair and highly convincing personnel system and evaluation system** to reward those who think, act, and produce results by themselves.

Close communication between subordinates and supervisors

Twice a year, each employee and the employee's supervisor hold a 1-on-1 meeting to provide feedback on the employee's evaluation and discuss the employee's future career.

Establishing an open work environment by providing **regular opportunities for close communication**.

Productivity improvements through the use of IT

Reducing wasteful work and improving T.RAD's productivity by **using IT**, from product manufacturing processes to clerical work. Then **shifting labor to high value-added sectors and new businesses**.

(3) Developing human resource through manufacturing

T.RAD has defined the image of human resources that it seeks as **employees who learn independently and carve out their careers**, and T.RAD is developing an education and training system to support this image.

Program types	Hierarchy			On demand
	New employee	Years of service	Managers and supervisors	
Program enrollment method	Collective, face-to-face type	Online type		Self-learning type (correspondence education)
Program enrollment method	Lecture style	Workshop style		OJT* style
Program enrollment purpose	Knowledge acquisition type	Technique acquisition type		Experience, awareness type

Active skill development through the career declaration system

Capacity building through an enhanced e-learning system that can be done at any time and at any place

*OJT = On The Job Training (An educational method in which supervisors and senior employees guide subordinates and junior employees through actual work to help them acquire knowledge, skills, etc.)

(4) Developing human resource of local management in overseas subsidiaries

As T.RAD operates worldwide, it is essential to establish a **local employee-centered business operation system**.

To this end, **T.RAD is developing global human resource management and an education system** and focusing on developing excellent human resources that will be the core of T.RAD's local subsidiaries.

T.RAD will particularly focus on the education and training programs specified below in T.RAD-12.

Promoting trainees' understanding of policy development system

Education to trainees' understanding of the personnel evaluation system

Training of design reviewers

Promoting trainees' understanding of QC* problem-solving methods

Compliance education

Occupational health and safety education

*QC = Quality Control

(5) The creation of a work environment in which a diverse workforce can thrive and respect for human rights-1)

【 The creation of a work environment in which a diverse workforce can thrive】

T.RAD will recognize the individuality and values of each employee and promote the creation of a work environment in which a diverse workforce can thrive.

Promoting the employment of people with disabilities

- Proactive recruitment activities and improvements in the working environment to achieve the legally mandated employment rate

Recruitment and promotion of multinational personnel

- Proactively recruiting excellent new graduates and career personnel regardless of nationality
- Actively promoting them to managerial and supervisory positions

Promoting women's activities

- Raising the target ratio of women to the total number of recruits to 30%, which is currently set at 20%

Maternity, childcare, and nursing care support systems

- Developing a system that allows employees to choose a way of working that meets their individual needs during their childcare and nursing care periods

(5) The creation of a work environment in which a diverse workforce can thrive and respect for human rights-2)

【Respect for human rights】

T.RAD follows the United Nations Guiding Principles on Business and Human Rights (UNGPR), which are international standards for codes of conduct for respect for human rights that all countries and companies must respect. Accordingly, T.RAD will promote **efforts to respect the human rights of all people** involved in T.RAD's business activities.

Human rights policy development

Developing a human rights policy as a basis for entrenching T.RAD's responsibility to respect human rights.

Human Rights Due Diligence*

Establishing and implementing a Human Rights Due Diligence mechanism to avoid or mitigate negative human rights impacts.

Corrective action

Defining the remedies for victims and measures to prevent recurrence if T.RAD is found to have been involved in an act that violates human rights.

*Human Rights Due Diligence = Understanding the risks of human rights violations associated with companies' business activities and taking measures to prevent or mitigate them.

5. A Company that achieve stable profitability

(1) Promoting cost reduction by productivity improvement (utilization of TPS, IoT, AI, etc.)

Promoting productivity improvement activities through TPS and DX (IoT + AI)
Promoting cost reduction activities through production line rectification

Realization of stable profitability with priority on safety and quality

Productivity improvement at each site

DX (AI + IoT) for the visualization of facility utilization rates and productivity issues, and per capita volume improvements (Unit/MH)

Process stabilization by improving mobility and linearity
→ Cost reduction

Cost reduction through the thoroughgoing elimination of waste using the Toyota Production System

Just in time

Reduce lead time

Process streamlining

Population decline line

Simplification of flow

- Rectification, dedication, and hybridization
- Arranging facilities in process order
- Letting manufacturing products one by one

Automation

Stops if there is an abnormality

Separation of human work and machine work

No defective products

- Developing productivity improvement activities through TPS and DX (IoT + AI)
- Neck process visualization
- Building quality into the process according to the manufacturing technology condition list

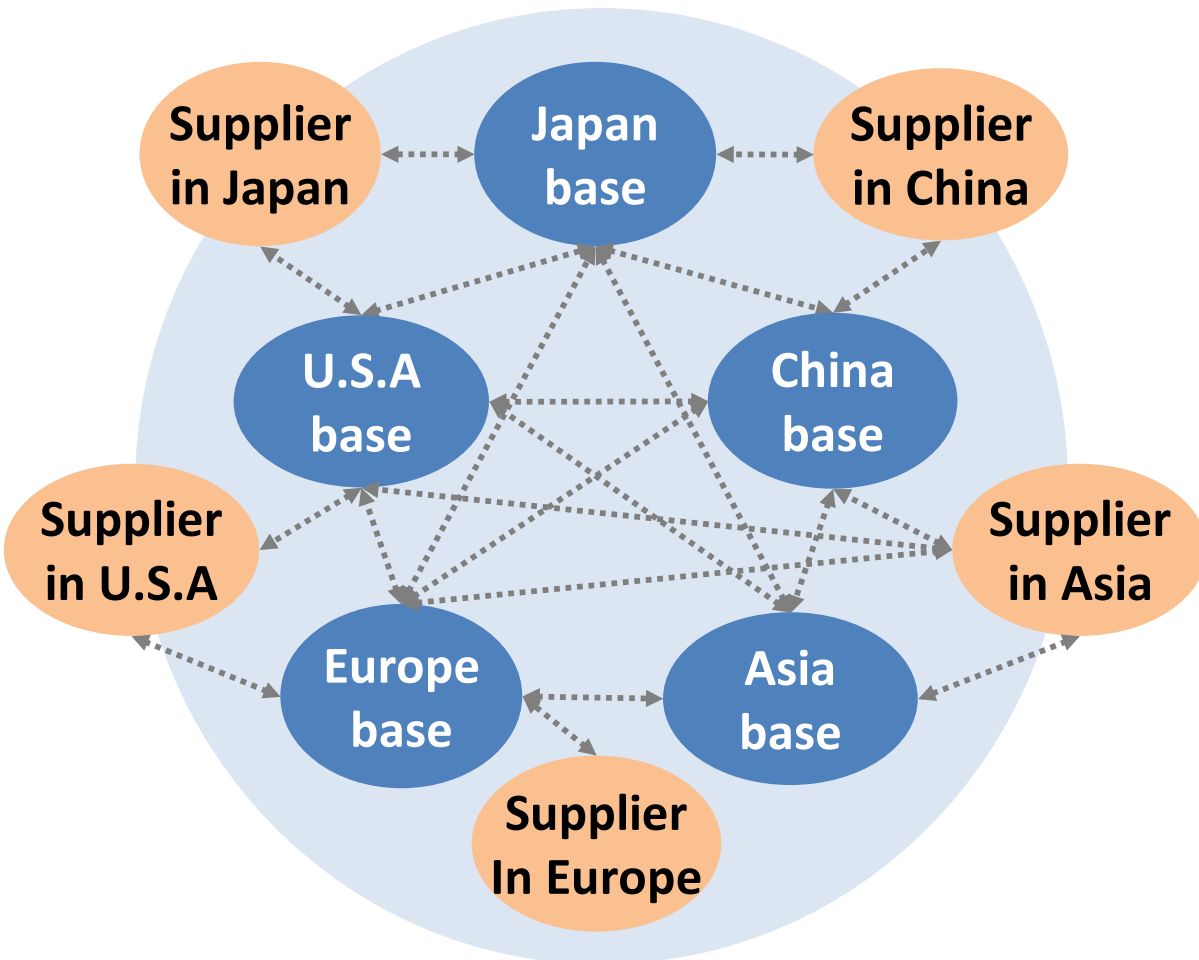
Reduced lead time between each order and shipment

Creating a system that does not backslide

Participation in process design at the production preparation stage

- Selling better products at lower prices

(2) Promoting cost reduction by global supply chain system construction and strengthening procurement capabilities



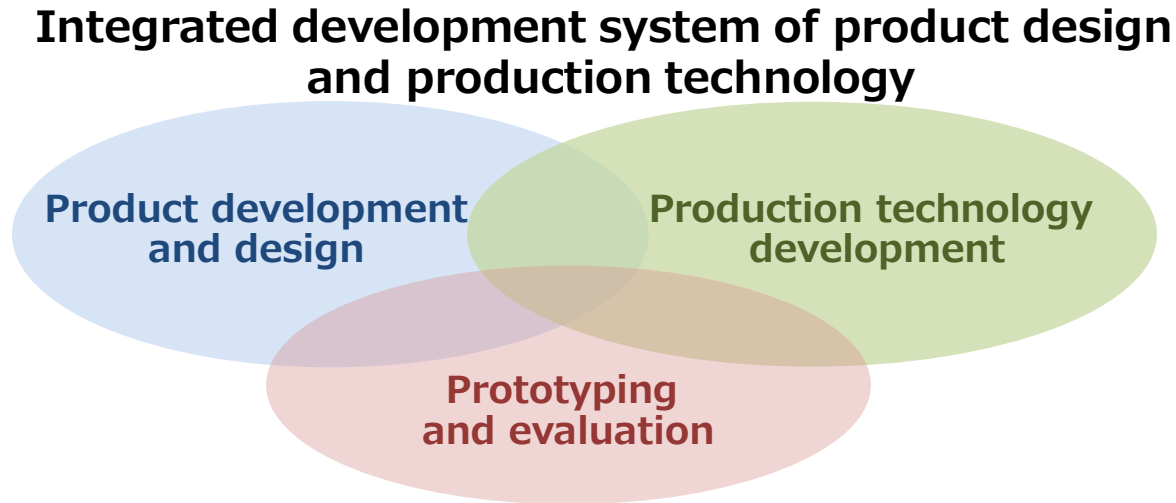
Promoting cost reduction

- Strengthening competitiveness through new development from a global perspective
- Promoting optimal procurement with consideration of a business continuity plan (BCP)
- Pursuit of optimal cost of purchased component materials
- Standardizing parts and materials and promoting appropriate quality standards

Global supply chain* system construction

*Supply chain = The entire sequence of events, from the procurement of raw materials and parts for products to the manufacturing, inventory control, delivery, sales, and consumption of products (supply chain)

(3) Promoting manufacturing reform by realizing unrivaled products and unrivaled lines



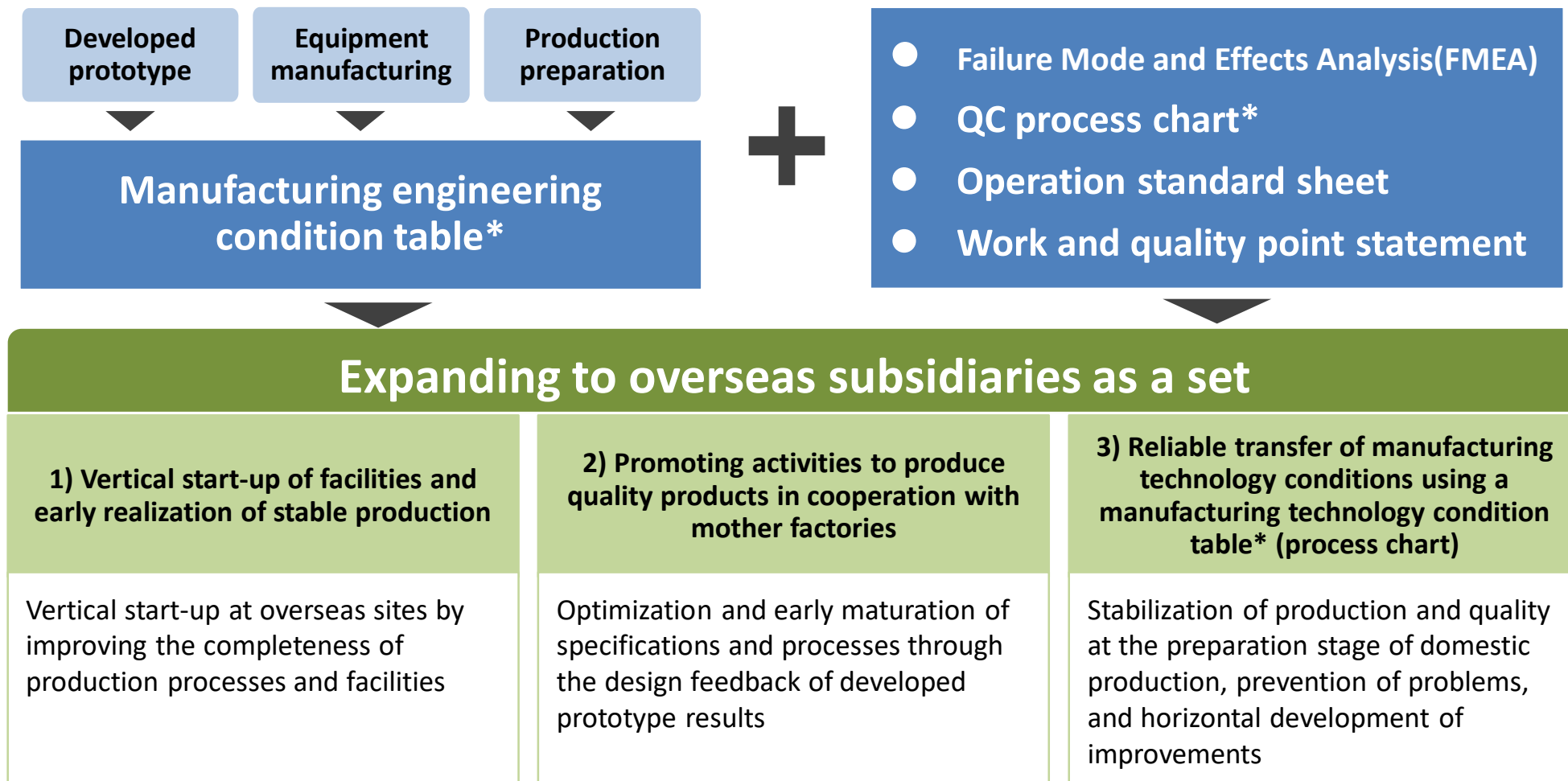
- 1) Developing unrivaled products and processes and establishing and maintaining a system to create them
- 2) Promoting the strategic development of unrivaled products and processes on a location-by-location basis
- 3) Striving for zero-defect lines

Realization of number-one Products and Unrivaled Lines

- **High functionality and high performance** through original technology
- Overwhelmingly excellent **cost competitiveness**
- **Optimal quality** made possible by a specialized manufacturer
- Production volume: **At least double**
- Installation area and workforce: **1/2 or less**
- CO2 reduction: **-30%**

5. A Company that achieve stable profitability

(4) Pursuing vertical start-up of new mass-produced products by strengthening the mother factories management system



*QC process chart = A chart describing control characteristics and methods for each process from receiving raw materials to processing, assembly, and shipping.

*Manufacturing engineering condition table (process chart) = A table summarizing the problems encountered in each process during prototyping, equipment manufacturing, and production preparation, the results of countermeasures, standards, and key points for each process.

5. A Company that achieve stable profitability

(5) Improving investment efficiency through stricter investment risk assessment and thorough monitoring

Risk assessment with return-on-investment analysis

Criteria for the profitability of new orders and return on investment

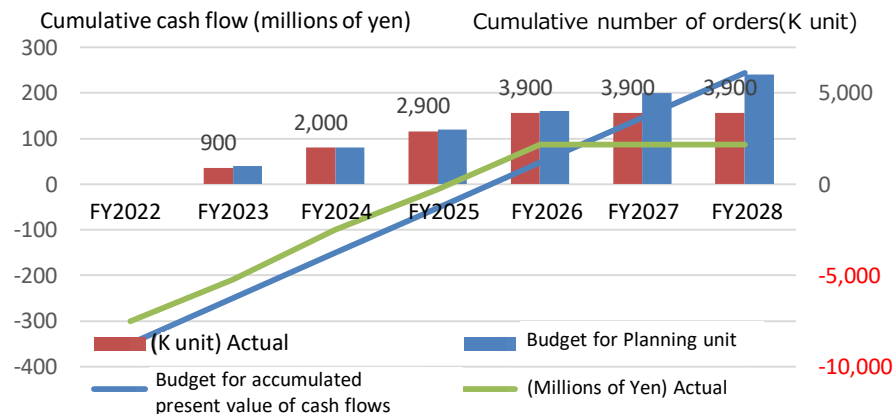
- Assessing profitability and return on investment in the case of new capital investment for new orders
- Scope of new capital investment :
Applicable to new line installation, the addition and modification of equipment due to an increase in volume

The future cash flows from new orders are discounted to present value using our weighted average cost of capital. The criterion is that the payback period for a positive cumulative cash flow is within the life cycle period of the product.

Monitoring of investment recovery performance

Monitoring of initial plans and actual performance for investment recovery

Improvements in investment efficiency and accuracy by analyzing the difference between the original plan and actual results



Analysis of differences between the cost at the time of planning and mass production cost and actions taken

Analysis of variance results

Mass production cost problems



Cost problem at the time of planning



Actions taken for analysis of variance results

Cost reduction activities

Review and feedback on data accuracy and calculation rules

(6) Promoting business reform (DX) by utilizing IT technology

Necessity of DX Promotion

Prompt response
to diversifying
customer needs

Promoting
carbon neutrality



Management issues

Improvements in
productivity and
operational efficiency

Faster decision
making for
investment and
management
improvement

Sales strategy
planning support

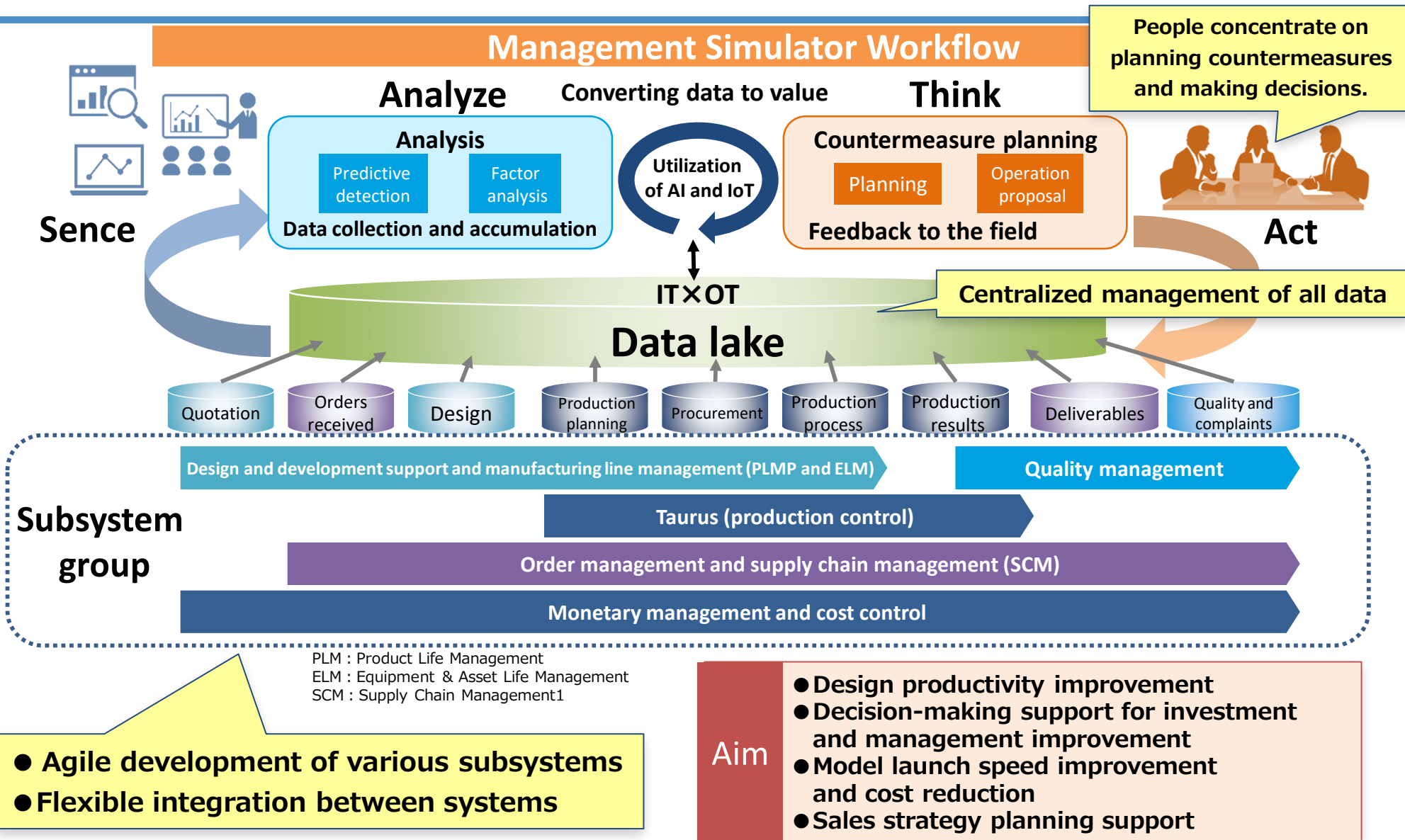
Transfer of
technology and
knowledge

...



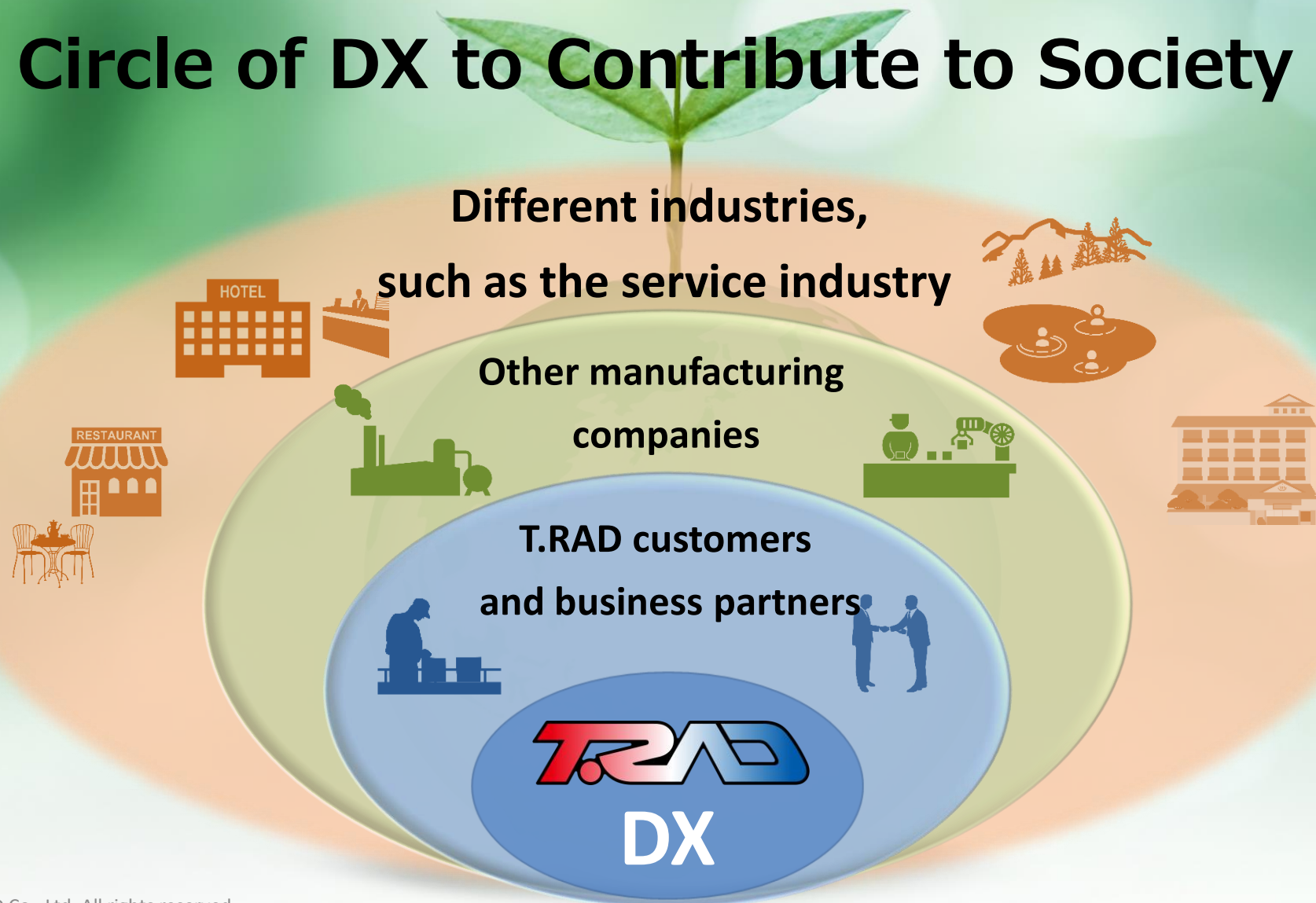
Promotion of digital transformation (DX) is essential

(6) Promoting business reform (DX) by utilizing IT technology



(6) Promoting business reform (DX) by utilizing IT technology

Circle of DX to Contribute to Society



5C+2S+3R



(1) A culture that allows us to tackle new and challenging things



(2) Activities that do not fear changes in the surrounding environment or the need to change ourselves



(3) Cross-departmental and cross-divisional communication and cooperation



(4) Activities attaching importance to speed



(5) Promotion of the 3Rs

Challenge

Change

Co-Operation

+

Co-Creation

Connect

+

Reuse

Recycle

Speed

Share

Reduce

**T.RAD will continue to take on challenges,
seeing these times of change as opportunities!**

