

Business portfolio

Accelerating transformation of the business model

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Finding new growth opportunities by identifying changes in demand and customer needs

Awareness of the environment

The world's growing and aging population, the concentration of population in urban areas, and traffic accidents have become major social issues. In addition, to address climate change and other environmental issues, there is a need to curb global warming, achieve resource recycling and symbiosis with nature, among other goals. As well as geopolitical risks, the environment surrounding the Toyota Boshoku group is becoming more complex than ever, including diversifying values. Below, we set out the Toyota Boshoku group's perception of the business environment based on a PEST analysis of political, economic, social, and technological factors.

PEST Analysis

Politics

- **Unstable global situation, rising geopolitical risks**
- **Carbon neutrality moving into the implementation phase**
 - Global response to climate change risk
 - Vacillating trends in internal combustion engine (ICE) vehicle regulations
 - Promotion of renewable energy and realization of a hydrogen society
- **Increasing social expectations for biodiversity restoration and advocacy of "nature positive"**
- **Human rights and environmental due diligence throughout the supply chain, becoming mandatory globally**
- **Response to diversity and inclusion by acknowledging, accepting, and optimizing diversity**

Economy

- **Rise of seven major emerging countries,¹ growth slowdown in developed countries**
 - Shifting balance of power
- **Shift to a circular economy based on the three principles of elimination, circulation, and regeneration**
- **Emerging scarcity of water, food, and resources, and the strengthening of economic security**
- **Spread of ESG investment, which is gaining importance on a global scale**

¹ China, India, Russia, Brazil, Indonesia, Mexico, Türkiye

Society

- **World population tops 8 billion**
 - Low birthrates and aging populations in developed countries, and population explosion in emerging countries
 - Increase in traffic accidents along with aging society
 - Healthy life expectancy is becoming important in relation to tightening healthcare expenditure
- **Social issues due to concentration of population in urban areas and overcrowding (infectious disease risk, increased traffic congestion, air pollution)**
- **Growth of Generation Z, a major new consumer segment, as influential buyers**
- **The push for "ethical" consumer behavior and the ripples of the sharing economy**
- **Promotion of Smart Cities, a future society that utilizes technology to realize a life of well-being**

Technology

- **Diffusion of AI, IoT, 5G, and other technologies of the future, and the digital transformation this requires**
- **Society 5.0, a vision of the future society that will be opened up by the advanced fusion of the cyber and physical spaces**
- **Post-COVID innovations that set the standard for contactless and autonomation**
- **Real-time reproduction of the real world in cyber space.**
Growing utilization of digital twin

Response based on environmental awareness

The mobility sector is changing rapidly due to factors such as growing environmental awareness and the advance of CASE, MaaS, and digitization. Against this backdrop, we intend to respond to growth opportunities by meeting diversifying needs, and to flexibly address risks such as environmental concerns and entrants from other sectors by strengthening our technological and MONOZUKURI capabilities. To this end, we have established the future we want to achieve, and the value we want to provide. We have clarified the additional technologies that will be needed, and have created a technology roadmap for the future. To realize a comfortable, safe, and secure automobile interior space, we will steadily promote R&D in accordance with this roadmap. (→p. 31)

Impact on the Toyota Boshoku group from trends in the mobility sector

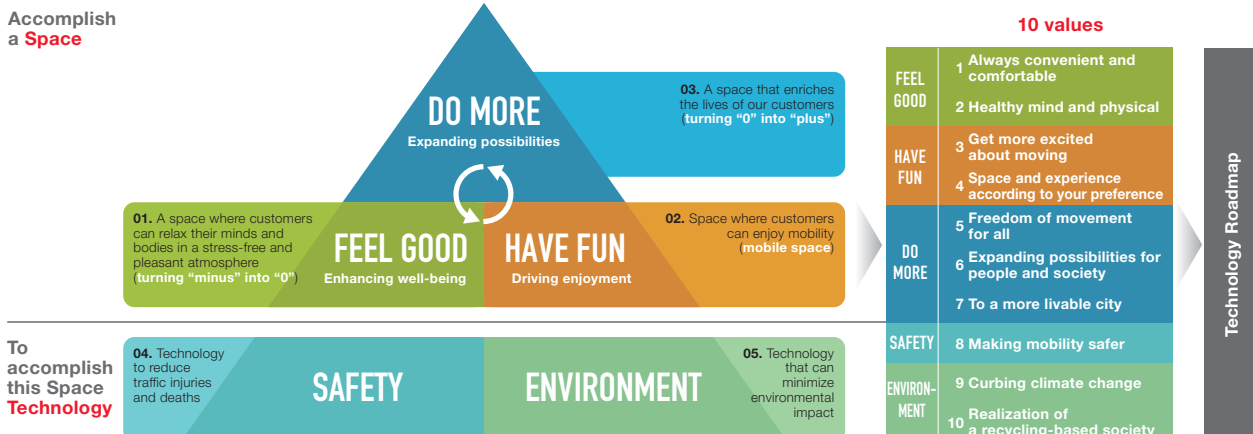
Trends in the Mobility Sector	Impact on the Toyota Boshoku group (● = opportunity / ▲ = risk)
Decarbonization and the transition to a circular economy	<ul style="list-style-type: none"> ● Growing public interest in carbon neutrality ▲ Tightening of material regulations in anticipation of a recycling-oriented society ▲ Cost increases due to compliance with environmental regulations
Market changes and new business opportunities brought about by the evolution of mobility	<ul style="list-style-type: none"> ● Contributing to a society with zero traffic casualties ● Creating new businesses that solve social issues <ul style="list-style-type: none"> - Supporting preventive care and outdoor life for the elderly ● Appearance of emerging OEMs and servicers ▲ Changes in and reorganization of the competitive landscape among OEMs ▲ Entrants from other sectors with the emergence of SDV²
Paradigm shift in values and consumer behavior	<ul style="list-style-type: none"> ● Creating new value that matches diversifying needs ▲ Trend of non-ownership of automobiles

² Software Defined Vehicle. Software-driven development of vehicles and vehicle manufacturing

Promoting development based on the technology roadmap

Vision Looking into the future, we will create tomorrow's automobile interior space that will inspire our customers the world over

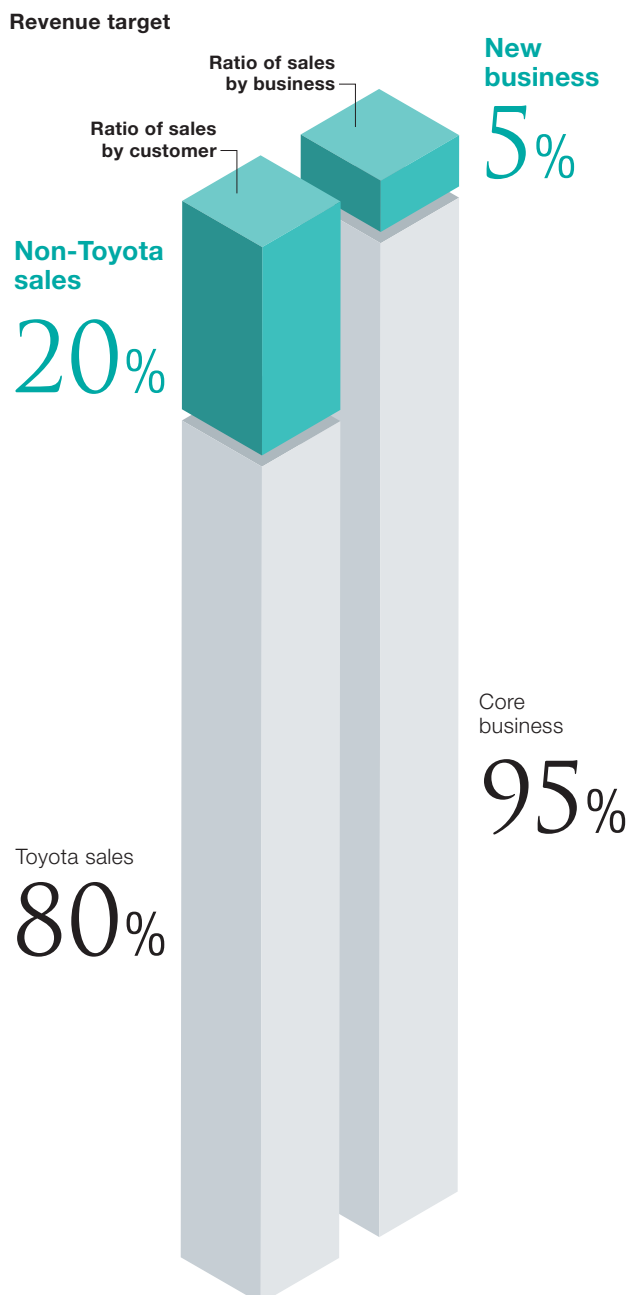
- Materiality**
- As an Interior Space Creator we will contribute to people's quality of life, creating comfort, safety, and reassurance through innovation
 - Using our established technical capability, we will contribute to realise a society with no traffic casualties through providing products that assure safety
 - Together with our business partners, we will realize MONOZUKURI innovations that minimize environmental stress
- (→p. 23)



Implementing a business portfolio strategy aimed at our desired status for 2030

The Toyota Boshoku group aims to be a company that creates an environmentally sound society in which people have smiles on their faces and lead enriched lives.

With the goal of creating new value as an Interior Space Creator, which is our desired status for 2030, we aim to achieve a ratio of 20% of sales to companies outside of Toyota Motor Corporation by strengthening our competitive advantage and offering multi-dimensional value. In addition, our aim is to increase the percentage of revenue generated by new business, by promoting operations that are compatible with CASE and MaaS, and by creating new value.



Promoting activities to win orders from non-Toyota customers

As an initiative to strengthen our sales capability, we will implement sales expansion activities moving toward 2030.

To date, we have been promoting activities to win orders mainly from automakers that have an alliance relationship with Toyota Motor Corporation (strategic OEMs), but we are aiming to further expand our sales channels as we move toward 2030.

Using as the basis the sales channels acquired through the transfer of commercial rights resulting from the reorganization of the seat frame mechanism components business, we will promote aggressive activities to win orders from customers other than strategic OEMs. (→ p. 29)

New business model through new businesses

The Toyota Boshoku group is committed to the development of cutting-edge technologies in accordance with the Principles of Toyoda, namely: “Always be studious and creative, striving to stay ahead of the times.”

Pursuing “safety,” “environment,” and “comfort” as part of our materiality, we will create new value as an Interior Space Creator and promote the creation of new businesses. Furthermore, by building a new business model, we aim to achieve sustainable growth and are striving to be a company that continues to be needed by society. (→ p. 67)

Core business performance (FY2023)

<p style="text-align: center;">Seat Business</p>	<p>Revenue (100 million yen)</p> <table border="1"> <thead> <tr> <th>Fiscal Year</th> <th>Revenue (100 million yen)</th> </tr> </thead> <tbody> <tr> <td>2021</td> <td>9,322</td> </tr> <tr> <td>2022</td> <td>10,511</td> </tr> <tr> <td>2023 (FY)</td> <td>11,922</td> </tr> </tbody> </table>	Fiscal Year	Revenue (100 million yen)	2021	9,322	2022	10,511	2023 (FY)	11,922	<p>Initiatives in fiscal 2023</p> <p>Aiming to become “Home” as a seat system supplier, secure solid profitability and achieve sustainable growth</p> <p>Developing seats in a timely manner in response to environmental changes</p> <ul style="list-style-type: none"> ● Develop dedicated BEV seats ● Develop materials and products aimed at achieving carbon neutrality and a circular economy ● Develop safe and comfortable seats compatible with autonomous driving <p>Developing attractive products by taking charge of the entire process from planning to launch</p> <ul style="list-style-type: none"> ● Develop competitive seat frames ● Promote electrification of rear seat operation ● Realize optimal global production (local production for local consumption and utilization of local resources) <p>Establishing a highly efficient production system</p> <ul style="list-style-type: none"> ● Introduce model lines incorporating automation to strengthen production infrastructure ● Consolidate production processes for seat frame mechanism components through the transfer of business from Aisin Corporation and Aisin Shiroki Corporation ● Develop methods that can respond flexibly to regional characteristics and volume fluctuations
Fiscal Year	Revenue (100 million yen)									
2021	9,322									
2022	10,511									
2023 (FY)	11,922									
<p style="text-align: center;">Interior & Exterior Business</p>	<p>Revenue (100 million yen)</p> <table border="1"> <thead> <tr> <th>Fiscal Year</th> <th>Revenue (100 million yen)</th> </tr> </thead> <tbody> <tr> <td>2021</td> <td>2,505</td> </tr> <tr> <td>2022</td> <td>2,727</td> </tr> <tr> <td>2023 (FY)</td> <td>2,996</td> </tr> </tbody> </table>	Fiscal Year	Revenue (100 million yen)	2021	2,505	2022	2,727	2023 (FY)	2,996	<p>Initiatives in fiscal 2023</p> <p>Implement initiatives toward becoming an interior system supplier that can surpass competitors</p> <p>Expanding our technological domain</p> <ul style="list-style-type: none"> ● Maintain activities to secure instrument panel R&D capabilities ● Implement planning and development of noise and vibration (NV), and heat shielding for new vehicle models in collaboration with OEMs <p>Expanding regions served as a system supplier and incorporating new components</p> <ul style="list-style-type: none"> ● Expand development orders for projects outside Japan ● Maintain activities to win new component orders and partially revise strategy <p>Conducting activities to strengthen global competitiveness</p> <ul style="list-style-type: none"> ● Implement thorough benchmarking of competitors to promote stronger MONOZUKURI capability <p>Expanding sales to strategic OEMs</p> <ul style="list-style-type: none"> ● Promote activities to win ceiling business orders in the North America region ● Promote activities to win door trim business orders
Fiscal Year	Revenue (100 million yen)									
2021	2,505									
2022	2,727									
2023 (FY)	2,996									
<p style="text-align: center;">Unit Components Business</p>	<p>Revenue (100 million yen)</p> <table border="1"> <thead> <tr> <th>Fiscal Year</th> <th>Revenue (100 million yen)</th> </tr> </thead> <tbody> <tr> <td>2021</td> <td>893</td> </tr> <tr> <td>2022</td> <td>975</td> </tr> <tr> <td>2023 (FY)</td> <td>1,121</td> </tr> </tbody> </table>	Fiscal Year	Revenue (100 million yen)	2021	893	2022	975	2023 (FY)	1,121	<p>Initiatives in fiscal 2023</p> <p>Promote strengthening of competitiveness to deepen and expand sales of filter & power train (FPT) products and electric products business</p> <p>FPT products business</p> <p>Filter products</p> <ul style="list-style-type: none"> ● Develop high-quality filters at an affordable price that match the market and customer needs ● Expand sales channels of own-brand filters in the aftermarket <p>Intake system products</p> <ul style="list-style-type: none"> ● Strengthen the competitiveness of intake system components by optimizing global material procurement <p>Electric products business</p> <p>Motor cores</p> <ul style="list-style-type: none"> ● Mass produce motor cores for Toyota Motor Corporation <p>Fuel cell-related products</p> <ul style="list-style-type: none"> ● Develop separators and ion exchangers for next-generation fuel cell stacks ● Develop compact fuel cell stacks for the future hydrogen society <p>Lithium ion batteries (high-rate batteries)</p> <ul style="list-style-type: none"> ● Win orders of prototypes for race cars
Fiscal Year	Revenue (100 million yen)									
2021	893									
2022	975									
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From fiscal 2022, New Business Promotion is included in the Seat Business segment due to a review of management categories. Revenue for fiscal 2021 is also presented in the reclassified categories

Seat Business

Aiming to become “Home” as a seat system supplier, secure solid profitability and achieve sustainable growth

In order to become a seat system supplier that is trusted and chosen by a large number of customers, we need to respond with urgency to the rapid changes in the environment, including electrification, carbon neutrality, and autonomous driving. The Toyota Boshoku group will develop appealing, high-quality products that address market trends and a diversity of requirements by acquiring our own unique R&D capabilities in areas such as seat-related controls, safety restraints, and infotainment.¹ We aim to achieve sustainable growth by making proposals to a large number of customers and having these products adopted by them.

¹ The generic name for systems that realize the provision of both information and entertainment



Hiroki Tsunoda
 Operating Officer
 Chief Technology Officer
 Segment Chief,
 Seat Business Segment

SWOT Analysis

		Strength	Weakness
		S+	W-
Opportunity O+		<p>SO strategy ++ (maximize strengths)</p> <p>Collaboration with Toyota Group companies × Changing user needs due to social and environmental issues and changing market trends (CASE, MaaS, BEV, carbon neutrality)</p> <p>Realize competitive products and development of methods in response to social issues and environmental changes, in cooperation with group companies</p> <p>Strengthening the competitiveness of the transferred seat frame mechanism components business × Expansion of sales channels through the transfer of commercial rights</p> <p>Expand sales of seat assemblies and frame mechanism components to customers other than Toyota Motor Corporation by maximizing the sales channels gained through the acquisition of business</p>	<p>WO strategy -+ (overcome weaknesses)</p> <p>Few customers other than Toyota Motor Corporation × Changing user needs due to social and environmental issues and changing market trends (CASE, MaaS, BEV, carbon neutrality)</p> <p>Develop products that can address changes in the environment and market, make proposals to OEMs other than Toyota Motor Corporation to meet their needs, and promote activities to win orders</p>
		<p>ST strategy +- (reduce the impact of threats)</p> <p>Global integrated system from planning to production × Expansion of threats to Toyota business by competitors</p> <p>Serve as the “Home” of seats by applying the knowledge gained through sales expansion to development and proposals, thereby steadily securing Toyota business</p> <p>Possession of development and production sites that can respond globally × Changes in the competitive landscape among OEMs associated with autonomous driving and electrification</p> <p>Strengthen activities to win orders for new OEM business outside of Japan by leveraging our global development and production systems</p>	<p>WT strategy -- (minimize the impact of negatives)</p> <p>Lack of system control and electronic component R&D capabilities × Intensified competition with competitors expanding into new fields, etc.</p> <p>Expand our technology fields by identifying technologies to be acquired for the future through comprehensive market research</p>
Threat T-			

Strategy

Aiming to be the seat system supplier of choice for many customers, with world-leading advanced technology, high product competitiveness and a broad product lineup

Fiscal 2024 Action Plan

- Develop dedicated BEV seats
- Realize thermal management through development of seat air-conditioning systems
- Develop new materials and new methods aimed at achieving carbon neutrality and a circular economy
- Strengthen the sales system for customers other than Toyota Motor Corporation
- Realize optimal global production planning
- Optimize resources through reorganization of the frame mechanism components business

Product Development Case Study 01

Newly developed front seat frame adopted in new Toyota Yaris Ativ in the Asia region

Toyota Boshoku's front seat frame developed for emerging markets has been adopted in the new Toyota Yaris Ativ in Thailand and Malaysia. This frame was developed to improve cost competitiveness and performance based on the concept of high-quality products at an affordable price. In addition, we have pursued a highly robust design, by optimizing the reinforced fabric structure of the seat covers to match the performance of the side airbags installed in the front seats. We are providing value-added products that meet emerging market needs through quality-focused design improvement activities.



Product Development Case Study 02

Seats used in new Suzuki Grand Vitara and new Toyota Urban Cruiser Hyryder in India

The Grand Vitara and Urban Cruiser Hyryder are the result of a collaboration between Suzuki Motor Corporation and Toyota Motor Corporation, and feature Toyota Boshoku seats. By utilizing our wrinkle prediction simulation for the front seat, we were able to both achieve a complex molded design and a smooth launch, from development through to production. Furthermore, Suzuki's first seat ventilation system also utilizes our accumulated expertise. For the rear seats, we also developed a compact and lightweight frame with a seatback lock featuring a dual level angle adjustment function.

Product Development Case Study 03

Toyota's new Alphard and Vellfire models feature seats that provide a comfortable ride and convenient seating arrangements

The second-row seats feature the power long slide² mechanism. This is a world-first system that allows 480 mm of forward/backward slide both by automatic and manual operation. It is possible to change the speed of the seat slides depending on whether there are occupants, allowing for improved convenience and a varied seating layout. As a relaxation function, the heated area of the seat is now larger, and is also included in ottomans and armrests for improved comfort. In this way, we have realized seats with a luxurious feel, combining both convenience and comfort.

² Standard equipment for Executive Lounge



Product Development Case Study 04

Aircraft seat developed by Toyota Boshoku approved as an Offerable Product for the Boeing 737

In March 2023, an aircraft seat developed by Toyota Boshoku was approved by Boeing as an Offerable Product for the Boeing 737 MAX family. This follows Offerable Product seat certification for the Boeing 787 Dreamliner in 2021. When airlines place orders for new aircraft, they select seats and other products from among certified offerable products, and so gaining accreditation has increased our opportunity to win orders from a variety of airlines.

Going forward we aim to further expand aircraft seat business with providing valuable products and services to the customers.

Interior & Exterior Business

Initiatives toward becoming an interior system supplier that can surpass competitors, while strengthening our competitiveness

Our goal is to become “Home” in the interior area by 2025. In fiscal 2023, the Toyota Boshoku group made progress as planned by acquiring design and performance planning capabilities and new component R&D capabilities. We are also expanding the scope (regions, development areas, and items) that we are entrusted with as an interior system supplier (“interior SS”), while also working to acquire new commercial distribution channels. In order to make the optimal interior proposals to customers, it is necessary to improve our component planning capabilities based on an understanding of vehicle performance. In fiscal 2024, while actively participating in performance planning areas such as noise & vibration (NV) and side impact, we will generate positive results from our activities to become a recognized presence as an interior SS. In addition, as electrification progresses, we will work together with Toyota Motor Corporation to propose modular structures for competitive interior components.



Seiji Teraji
 Operating Officer
 Segment Chief, Interior & Exterior
 Business Segment

SWOT Analysis

		Strength	Weakness
		S+	W-
Opportunity O+		<p>SO strategy ++ (maximize strengths)</p> <p>A structure and proposal capabilities for total interior coordination × Advance of EVs Proposals for automobile interior space planning to address changes in vehicle structure and proposals for new product structures such as modules × Expansion of interior business to customers other than Toyota Motor Corporation Expand the interior SS area including development and incorporation of new components Development of materials using plant-derived raw materials × Response to carbon neutrality Expand the application of kenaf to design components</p>	<p>WO strategy -+ (overcome weaknesses)</p> <p>Business responsiveness to new customers × Expansion of interior business to customers other than Toyota Motor Corporation Strengthen sales to new OEMs Lack of knowledge on comfortable automobile interior space (NV, heat shielding) × Advance of EVs Implement product planning for interiors to meet vehicle performance requirements</p>
		<p>ST strategy +- (reduce the impact of threats)</p> <p>A structure and proposal capabilities for total interior coordination × Cost competitiveness of Chinese and other local manufacturers Propose appealing products while ensuring cost competitiveness</p>	<p>WT strategy -- (minimize the impact of negatives)</p> <p>Competitiveness of existing products × Cost competitiveness of Chinese and other local manufacturers Strengthen global cost competitiveness Low recognition as an interior SS × Intensifying competition due to the emergence of local manufacturers Carry out sales activities to strategic OEMs utilizing total proposal capabilities</p>
Threat T-			

Strategy

Become a true interior system supplier capable of providing everything for the entire interior, from the concept stage

Fiscal 2024 Action Plan

- Expand the scope of work entrusted to us as an interior SS
- Develop new products such as modules compatible with electrification
- Develop carbon neutral-compatible recycling technology and mono-material product structures
- Strengthen competitiveness of core technologies

Product Development Case Study 01

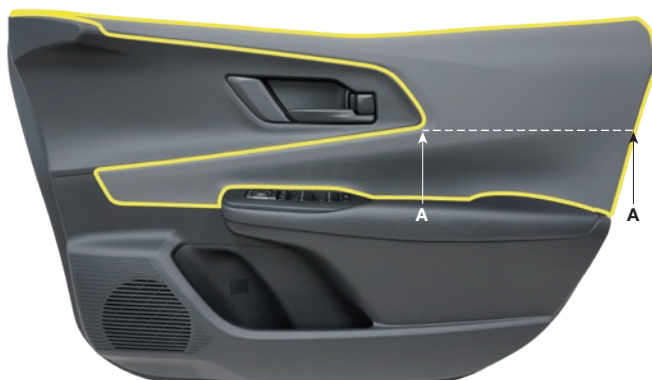
Door trim using adhesive with reduced environmental impact adopted for new Toyota Prius

A new environmentally sound adhesive that does not contain organic solvents has been adopted for the adhesive used to attach the surface material to the upper part of the door trim.

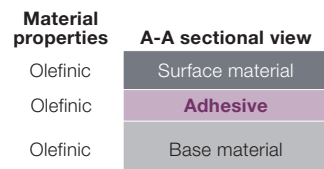
By unifying the material with the other door trim components, it has become possible to recycle the material of the upper part, which previously could not be recycled and was disposed of, thereby contributing to the circular economy.

Additionally, in the process of applying adhesive to the surface material, a new technique was developed in cooperation with the manufacturing division that allows only the required amount of adhesive to be applied. Two processes, drying and backside coating, have been reduced, and CO₂ emissions from the manufacturing process have also decreased.

We have developed door trims and created processes that are worker-friendly while also contributing to the realization of carbon neutrality.

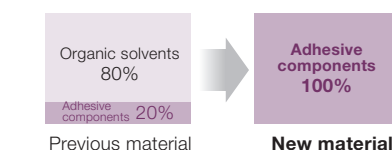


Structure of door trim upper part

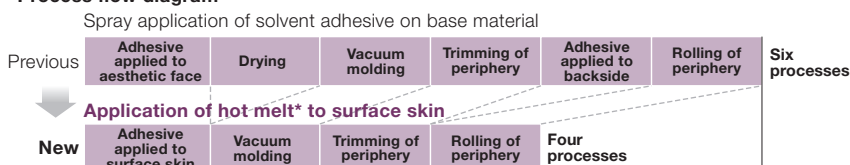


Materials are unified

Composition of adhesive



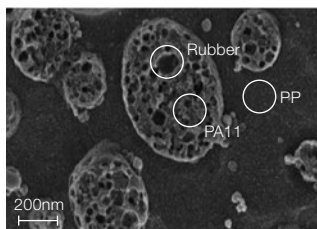
Process flow diagram



* Adhesive that bonds after heating and melting, and does not contain any organic solvents

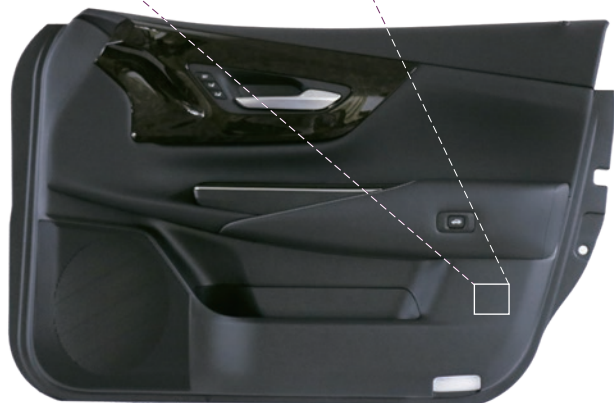
Product Development Case Study 02

High impact-resistant plastic receives the Award for Science and Technology of the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology



Salami structure of high impact-resistant plastic

In May 2023, a high impact-resistant plastic jointly developed in 2013 by Toyota Boshoku and Toyota Central R&D Labs, Inc., received the 2023 Award for Science and Technology (Development Category) of the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology. This award recognizes groundbreaking R&D or an invention that contributes to the development and improvement of the social economy and people's lives, and is put into actual use.



Product Development Case Study 03



An office table using kenaf base material for the tabletop

Commercialization of an office table using kenaf board in the tabletop

Since kenaf absorbs more CO₂ during its growth phase compared with needle- and broad-leaved trees, we have been using kenaf board, a mixture of kenaf and polypropylene, for automotive interior materials to help reduce weight and achieve carbon neutrality. We are expanding the use of kenaf base material in order to apply the technology we have cultivated so far to areas other than automotive parts. Utilizing our expertise in kenaf board processing technology in the field of office furniture, in 2022, an office table that employs kenaf base material for the tabletop was commercialized through joint development with Itoki Corporation.

Unit Components Business

Pursuing global business opportunities by leveraging proprietary technologies

In fiscal 2023, the Toyota Boshoku group raised its proprietary motor core technology to the production level and won new orders. In addition, we have enhanced our prototype high-rate batteries to the level of practical application and provided them to customers outside of Japan for testing. We have also begun using e-commerce for our filter and powertrain (FPT) products to expand sales in the global aftermarket. In fiscal 2024, we carried out a reorganization to consistently accelerate the process from product planning through to development and production, for both electric and FPT products. We will further expand our field of business outside of Japan by optimizing the technology we have amassed to date. We will support each individual within the division so that they have the confidence to identify and proactively engage new global business partners.



Ikutomo Sakai
 Segment Chief, Unit Components Business Segment
 Deputy Segment Chief, Research & Development Segment

SWOT Analysis

		Strength	Weakness
		S+	W-
Opportunity O+		<p>SO strategy ++ (maximize strengths)</p> <p>New product development capability and competitive advantage by utilizing our core technologies × Increased demand for electrified products</p> <p>Development of electric products utilizing core technologies × Growing need for filters to provide a comfortable automobile interior space</p> <p>Strengthen our filtration expertise and expand applications A global production and supply system × Increased demand for electrified products</p> <p>Establishment of a global production and supply system for electric products × Growing need for filters to provide a comfortable automobile interior space</p> <p>Expand sales of filter products to regions with growing markets</p>	<p>WO strategy -+ (overcome weaknesses)</p> <p>Lack of recognition for production and development of electric products × Public interest in SDGs and carbon neutrality</p> <p>Development of carbon-neutral compliant electric products × Increased demand for electrified products</p> <p>Product planning for carbon neutrality Promotion of DX × Discovery of new businesses associated with electrification</p> <p>Break away from production-oriented approach by strengthening marketing mechanisms and systems Support for high-mix production × Growing need for filters to provide a comfortable automobile interior space</p> <p>Establish a global supply system for aftermarket filters</p>
		<p>ST strategy +- (reduce the impact of threats)</p> <p>New product development capability and competitive advantage by utilizing our core technologies × Soaring raw material costs</p> <p>Strengthen product development and supply systems that can respond to changes in the environment Industrial-academic collaboration with group companies and universities × Intensifying competition due to market entrants from other sectors</p> <p>Industrial-academic collaboration for business model transformation in response to environmental changes A global production and supply system × Acceleration of electrification, including BEVs</p> <p>Determine the optimal regional solutions (ensure competitiveness of engine-related parts)</p>	<p>WT strategy -- (minimize the impact of negatives)</p> <p>Lack of recognition for production and development of electric products × Intensifying competition due to market entrants from other sectors</p> <p>Increase recognition of our electric products Maximizing utilization of existing production facilities × Intensifying competition due to market entrants from other sectors</p> <p>Increase development speed by leveraging DX</p>
Threat T-			

Strategy

Deepen and expand sales of electric and FPT products by leveraging core technologies developed in existing businesses

Fiscal 2024 Action Plan

- Develop products with carbon neutrality in mind
- Promote sales expansion of filter products and motor cores on a global basis
- Develop compact fuel cell stacks for the future hydrogen society
- Realize vibrant work style innovation and develop human resources
- Further promote TQM activities

Product Development Case Study 01

Motor cores used in Toyota's new Noah and Voxy models

As well as products such as seats, door trims, cabin air filters, and oil filters, our motor cores for hybrid systems have been adopted to support electrification.

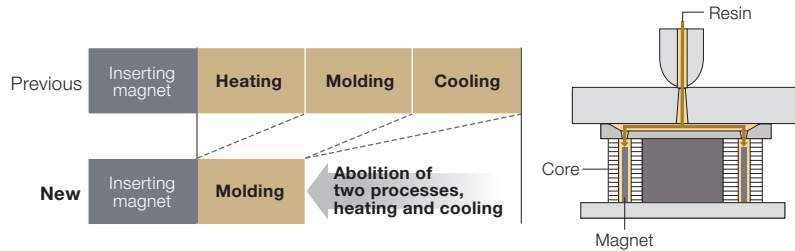
In order to accommodate the concurrent production of Noah and Voxy, we optimized facility capacity to reduce investment and incorporated a mechanism to prevent the mixing of different materials and products, which is a concern for mixed-flow production lines. This has ensured our competitive advantage in terms of both cost and quality.

Product Development Case Study 02

Development of new technologies such as magnet molding method using motor core thermoplastic resin

We have developed a heatless magnet molding process using thermoplastic resin. The elimination of the heating and cooling processes also contributes to carbon neutrality.

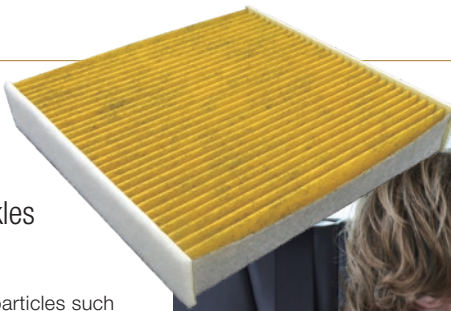
This has been made possible by our world-leading high-precision stamping technologies as well as our precision mold technology, which has an integrated process from mold development through to fabrication and maintenance. Utilizing these technologies, we will also continue to expand production outside Japan.



Product Development Case Study 03

**“Clean Air Filter Premium”
Enhanced deodorizing power also tackles food odors**

The three-layer structure of the filter intercepts particles such as dust and pollen from outside the car thanks to highly efficient dust removal capabilities, and can remove odors from exhaust fumes (acetaldehyde) and pets (ammonia). In addition, the amount of activated carbon has been increased to tackle food odors such as from fast food, something that was requested by many respondents to our survey. Odors are reduced in about 5 minutes and are almost completely eliminated in about 10 minutes. We will utilize this technology in other filter products in order to continue to contribute to the realization of a comfortable automobile interior.

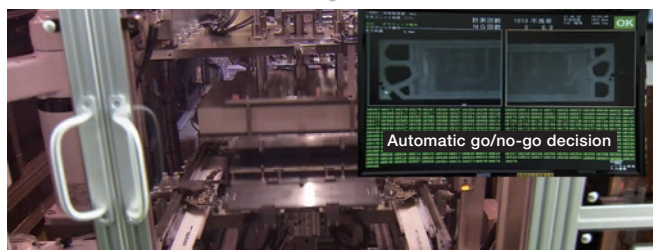


Product Development Case Study 04

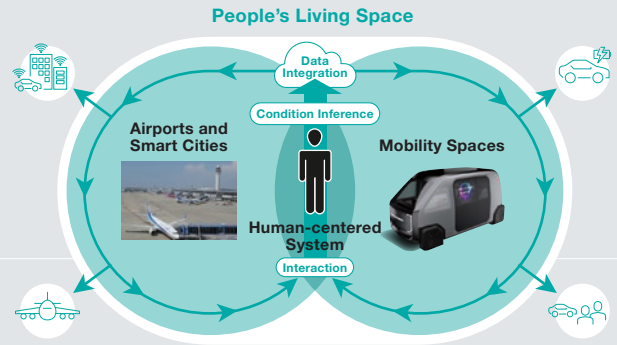
Development of a visual automation-based inspection device for fuel cell separators using AI

To improve the quality of fuel cell separators used in the Toyota Mirai, the conventional visual inspection by human operators has been replaced with an automation-based inspection employing a 4K camera to detect minute defects. Through in-house development of an automation-based inspection device that combines AI with a camera, we were able to reduce the inspection decision time by one third while keeping investment low. As a result, the false positive detection rate was expected to approach zero. In fiscal 2024, we will begin demonstration testing in the prototype process to establish reliability. We will also consider horizontal deployment to other electric product processes.

We will further strengthen our competitive advantage through rapid manufacturing, in line with the development of electrification.



Initiatives for new business



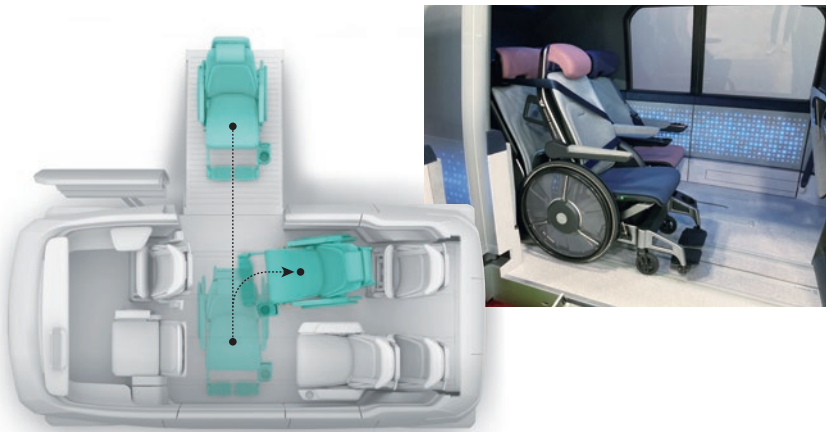
Becoming an Interior Space Creator

The Toyota Boshoku group is aiming to be an Interior Space Creator, leading the creation of new value for mobility spaces. As well as mobility spaces, we are expanding our target area to the entire living space in which people live, and are promoting the creation of new value to watch over and guide people. We will provide new value to meet diverse needs and contribute to people's quality of life by developing human-centered systems that infer people's conditions and guide them to a better state.

Case Study 01

Freedom of movement for all.
MX ACCESS, enabling vehicle boarding without a helper

MX ACCESS was developed as a mobility independence support for wheelchair users, envisioning a rideshare space in the age of autonomous driving. With a one-touch wheelchair fixing structure and a three-point seatbelt that the user can attach by oneself, wheelchair boarding can be completed in one minute without the need for a helper. We are pursuing not only convenience, but also safety and comfort.



Case Study 02

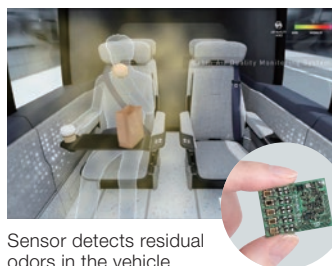
Providing a behavior and attribute visualization system

With the goal of improving the satisfaction of airport visitors, we developed a system to visualize and analyze people's behavior and attributes. Data from cameras and Wi-Fi packet sensors installed in the airport is analyzed and provided to operators. The service has already been launched at Chubu Centrair International Airport, and is being used to understand how people spend their time and to predict their needs. We are planning to expand the service to other airports and facilities in the future.

Case Study 03

Accelerating investment in startups

We are promoting the development of technologies in response to the evolution of automobiles and changes in values, including autonomous driving and mobility sharing. In fiscal 2023, we invested in Aroma Bit, Inc., a company whose work involves visualizing aromas, and jointly exhibited items that realize comfort at CES 2023. We have also invested in Motion Lib, Inc.,¹ NearMe, Inc.,² and H2L, Inc.³ to create new value in the mobility space while actively incorporating outside technology and knowledge.



Sensor detects residual odors in the vehicle



A vehicle is allocated after deodorization to ensure a comfortable cabin space

- 1 Possesses haptics technology that enables machines to reproduce and transmit "just the right amount of human strength"
- 2 Conducts nationwide development of new mobility sharing services using AI
- 3 Is engaged in research and business development of BodySharing®, a new generation of sensory sharing technology following on from audio-visual technology