



**KIRIN**

Joy brings us together

# **Growth Strategy of Health Science domain**

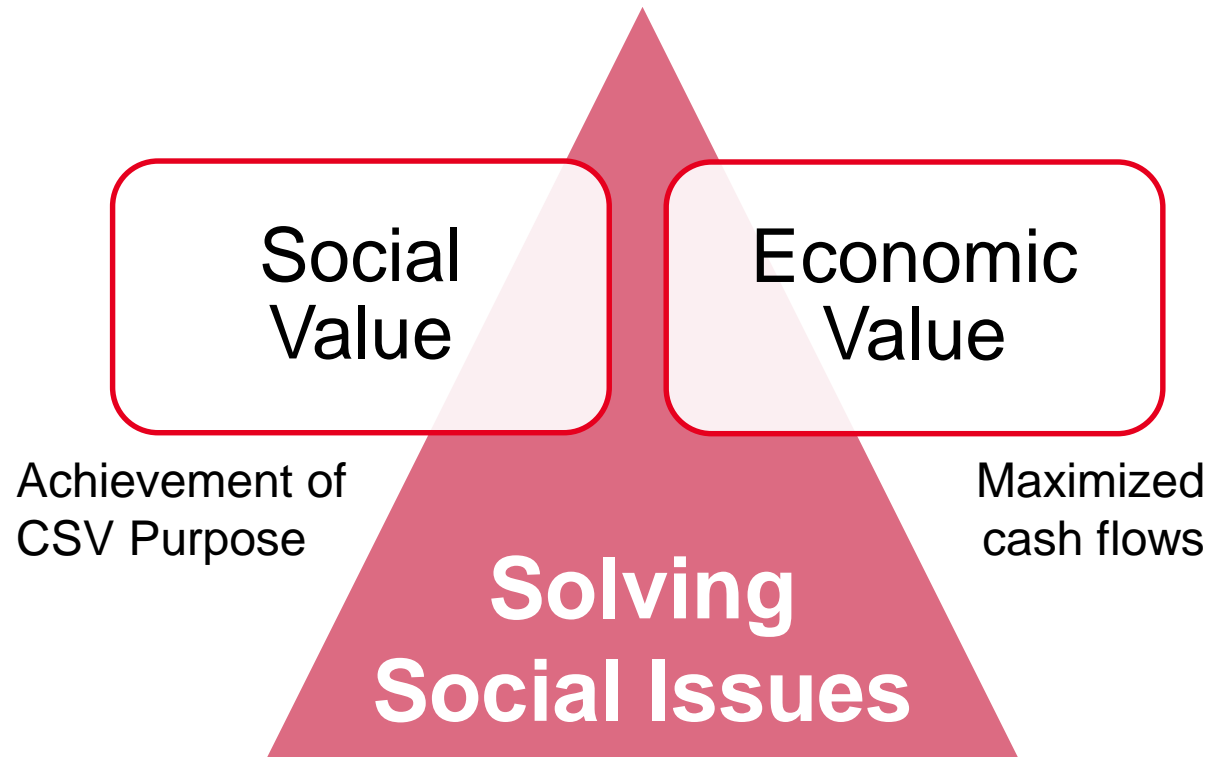
March 3, 2020

Kirin Holdings Company, Limited

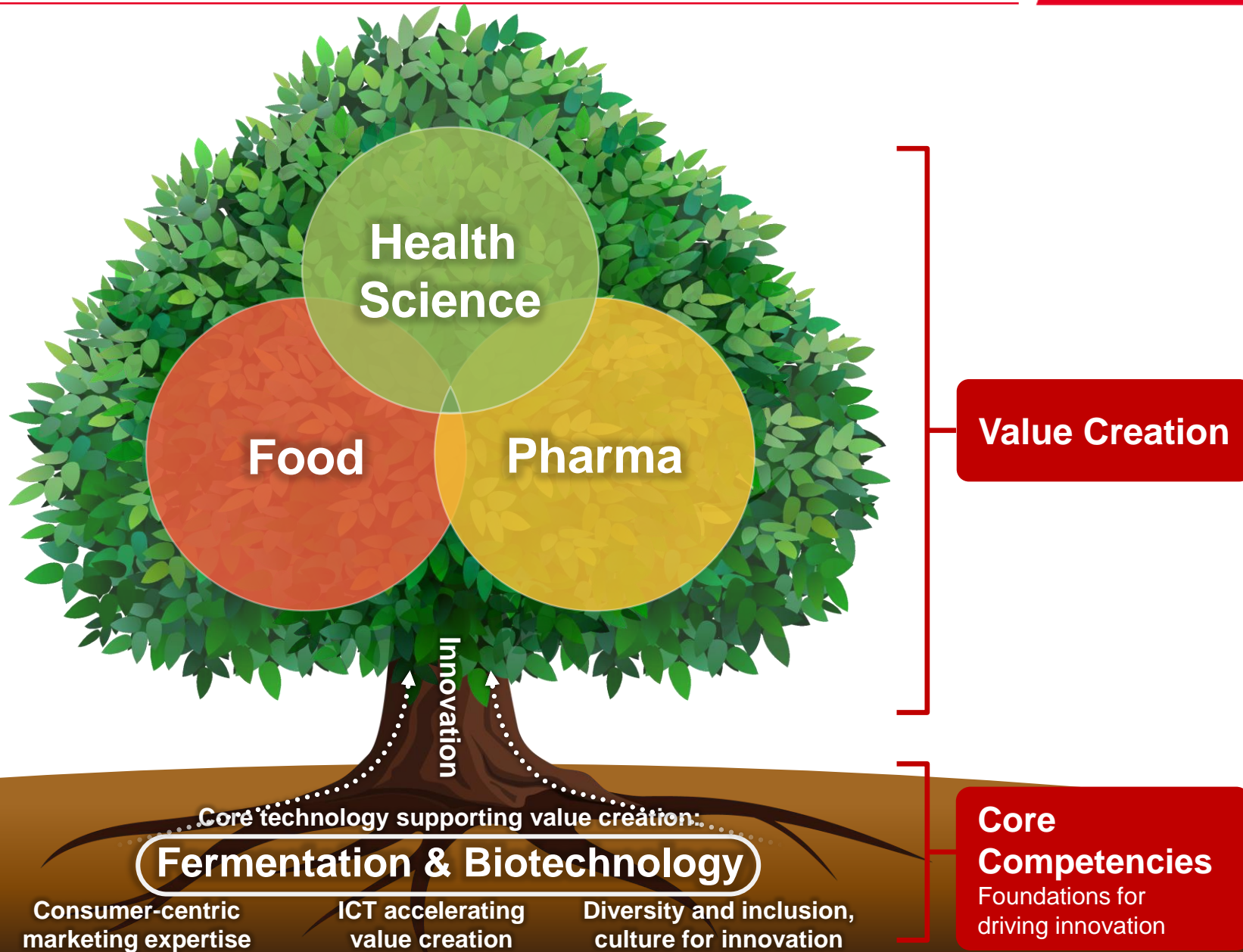
- 1. Introduction**
- 2. Opportunities in Health Science**
- 3. Unlocking Value in Kyowa Hakko Bio (KHB)**
- 4. Synergies with FANCL**
- 5. Medium- to Long-Term Initiatives (with Kyowa Kirin)**
- 6. Financial Outlook**

**Become a leading global CSV company and  
aim to maximize Social and Economic Value**

## Sustainable Growth



# Kirin Group's Core Competencies and Value Creation

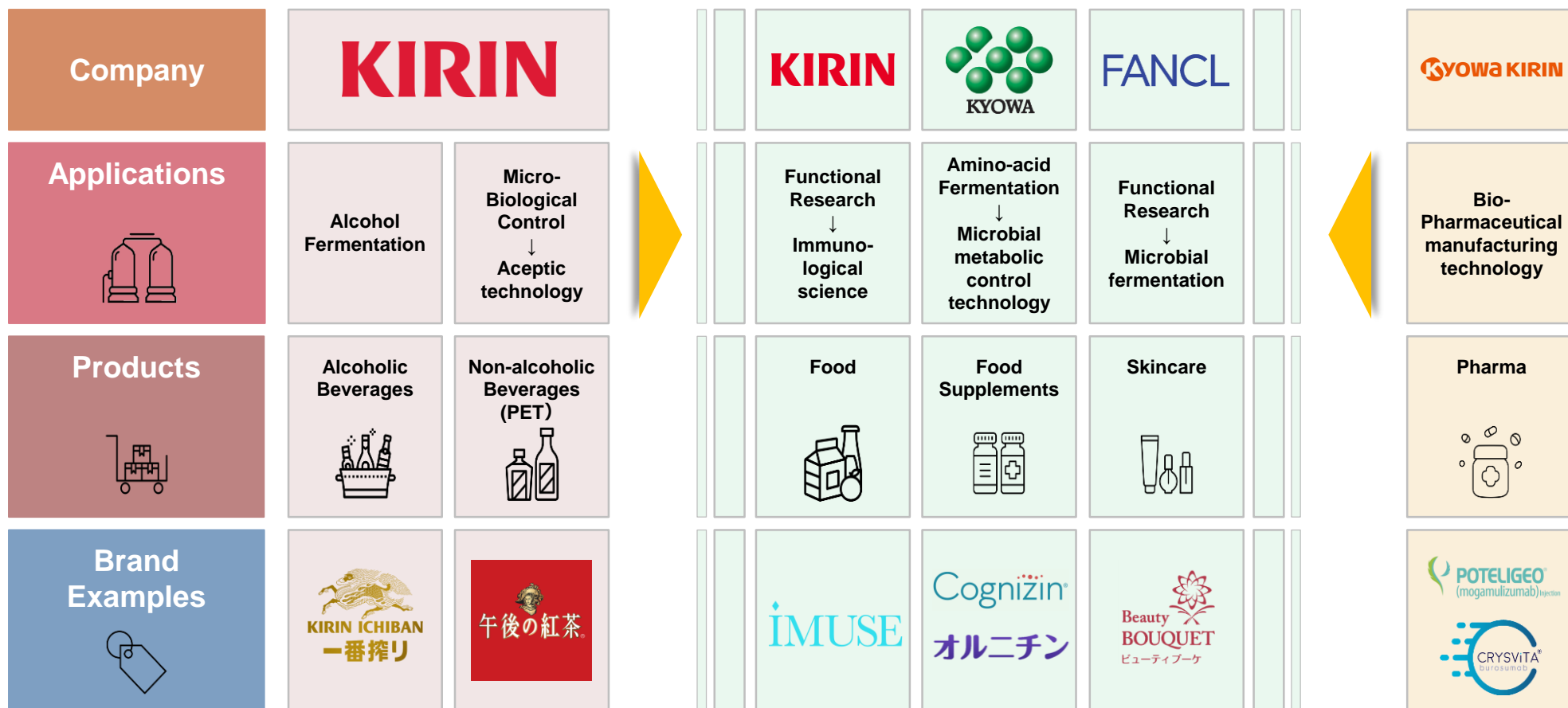


# Kirin's Fermentation and Biotechnology R&D

## Drawn from 100+ Years of Experience

**Kirin's robust fermentation and biotechnology R&D is world-leading**

### FERMENTATION & BIOTECHNOLOGY



# Kirin Group's Business Domains

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## **FANCL investment completes the foundation for Kirin's Health Science value chain**



















**“Businesses bridging Pharma  
and Food & Beverages”**



**“Health Science Business”**

# Build a Strong Value Chain in Health Science

**Construct a strong value chain combining industry-leading strengths of each business**

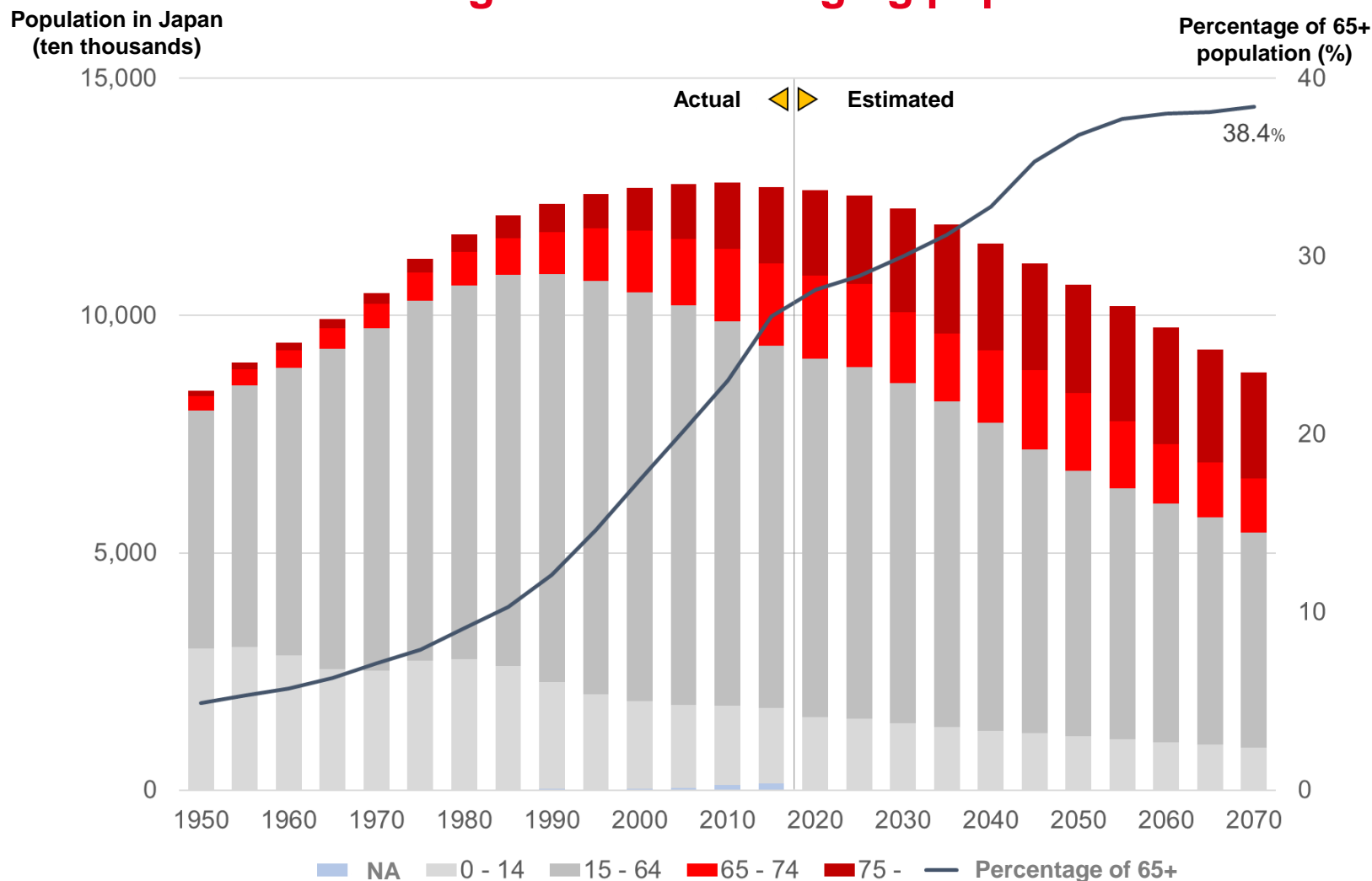
|  |  <b>Foundation Research</b>                |  <b>Application Research</b>                 |  <b>Merchandise Development</b>    |  <b>Manufacturing</b>   |  <b>Sales Channel</b> |
|--|---|---|---|--|--|
| <b>KIRIN</b>   | <br>Food and Pharma seeds                  |   | <br>Beverage development packaging | <br>Manufacturing technology and production control engineering                     |  |
| <b>FANCL</b>   |   | <br>Functional evaluation Masking technology | <br>Formulation technology         | <b>Marketing expertise</b><br><br>Brand and wholesale distribution on/offline sales |  |
| <br><b>KYOWA</b> | <br>Highly proprietary materials research |   |   | <br>Low-cost fermentation production technology                                    | <br>EC and B2B       |
| <b>KYOWA KIRIN</b>   | <br>Pharmaceutical discovery seeds       | <b>Not applicable for pharmaceuticals</b>   |   |  |  |



# Opportunities in Health Science Business

# Japan's Declining Birthrate and Aging Population

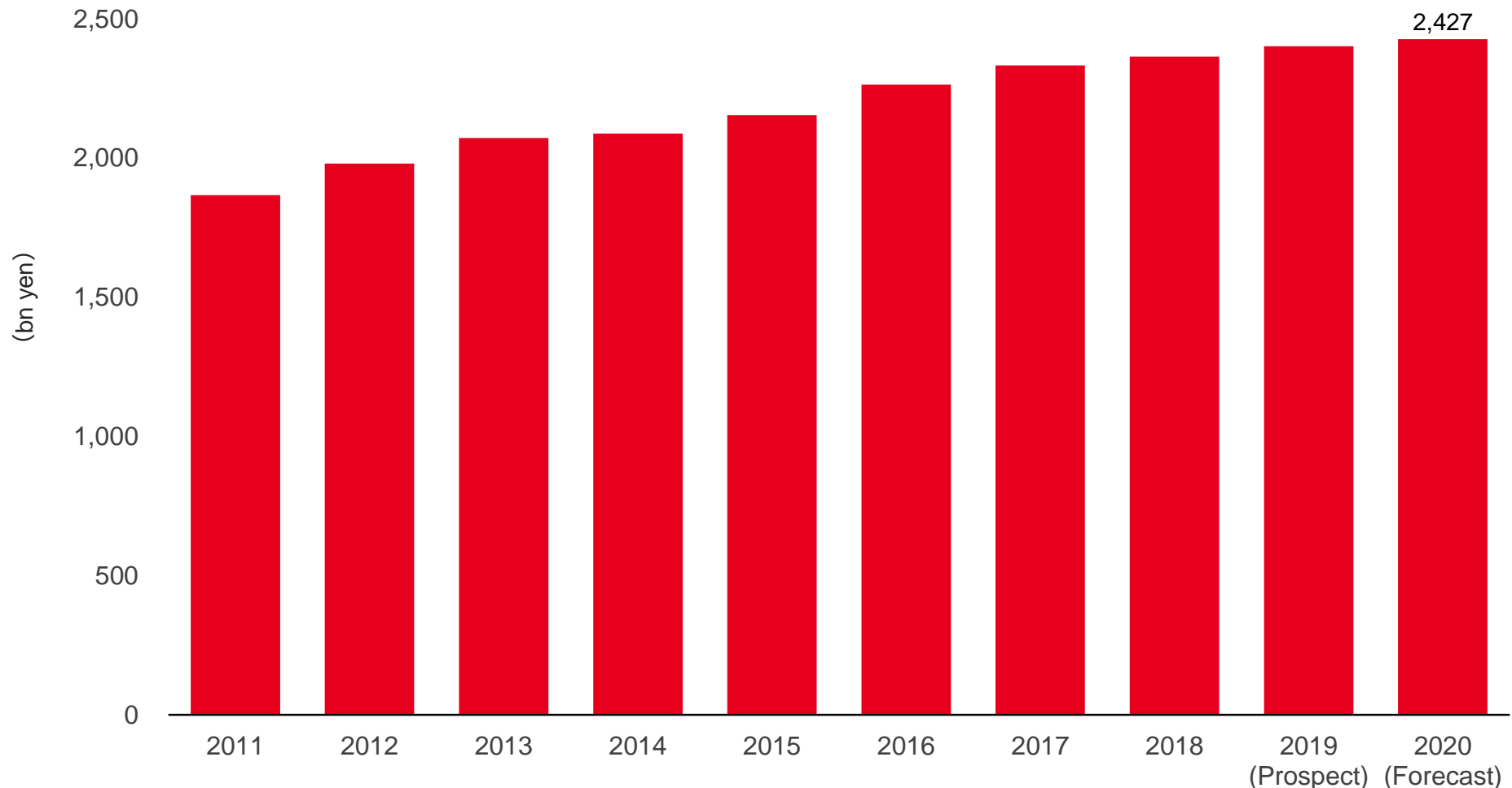
**Increased focus on health driven by declining birthrate and aging population**



Source: White Paper on the Aging Society 2019, Cabinet Office (overall version)

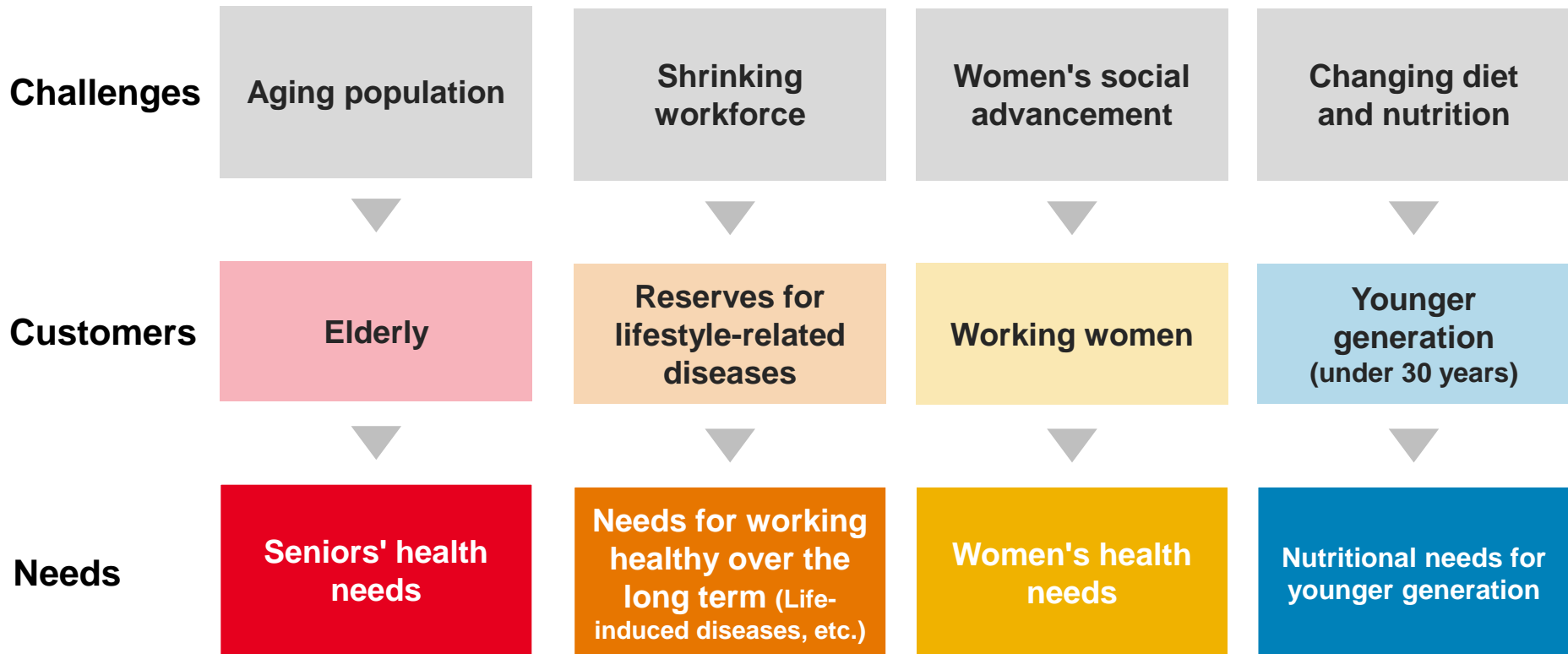
## Health and wellness food market continuing its expansion toward 2.4tn yen in 2020

Health and Wellness Food Market\*



# Challenges and Needs Addressed by Kirin Group

**Solve global social issues by  
addressing needs centered around "Health"**



**Increase corporate value  
by solving pressing needs**

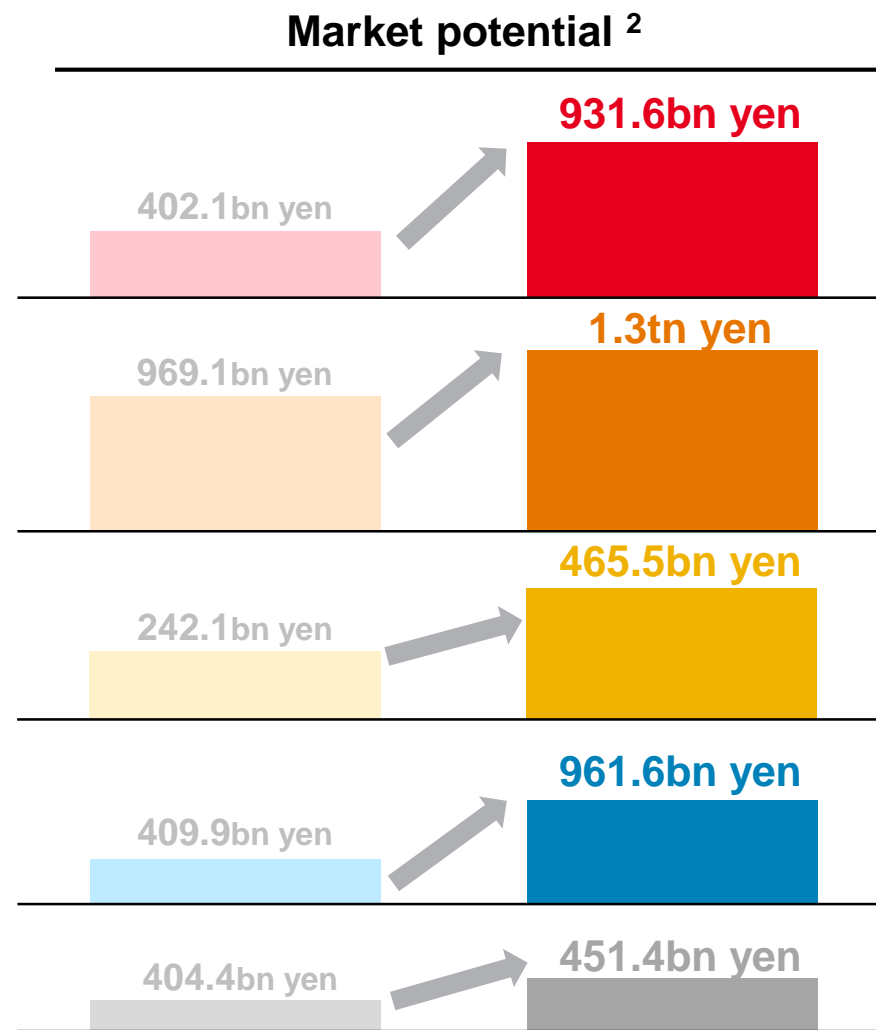
# Strong Market Potential by Needs: +4tn yen Opportunity in Health and Wellness Market

## Potential market opportunity to address unmet needs

| Key demand <sup>1</sup>  |                            | Percentage of people is coping | Gap Inc. (Times) | Percentage of people who want to cope |
|--|----------------------------|--------------------------------|------------------|---------------------------------------|
| Seniors' health needs  | Bones and joints           | 8.3                            | x 2.0            | 16.6                                  |
|  | Immunization               | 6.4                            | x 2.3            | 15.0                                  |
|  | Blood circulation          | 9.4                            | x 1.8            | 17.2                                  |
|  | Dementia                   | 3.1                            | x 5.9            | 18.4                                  |
| Needs for working healthy over the long term (Life-induced diseases, etc.) | Lifestyle-related diseases | 15.9                           | x 1.3            | 20.9                                  |
|  | Intestinal regulation      | 14.2                           | x 1.2            | 16.5                                  |
|  | Multi-balance              | 8.8                            | x 1.6            | 14.3                                  |
|  | Muscular <sup>3</sup>      | 15.5                           | x 1.6            | 24.3                                  |
|  | Sleep                      | 7.7                            | x 2.4            | 18.4                                  |
| Women's health needs   | Diet                       | 10.8                           | x 1.9            | 20.9                                  |
|  | Beauty                     | 9.9                            | x 1.9            | 18.9                                  |
| Nutritional needs for younger generation                                   | Nutrition & revitalization | 8.7                            | x 2.4            | 20.7                                  |
|  | Liver function             | 3.0                            | x 3.4            | 10.3                                  |
|  | Eye Care                   | 15.4                           | x 1.2            | 18.6                                  |
|  | Hormone                    | 5.9                            | x 2.1            | 12.1                                  |
| Other  | Oral                       | 10.9                           | x 1.7            | 18.4                                  |
|  | Others                     | -                              | -                | -                                     |

Note: 1. Excluding small-scale needs  
2. If everyone wants to deal with it  
3. Sports related food / supplements  
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Market size and breakdown of 2.4tn yen:  
H · B Foods Marketing Handbook 2020 №1.№2,  
Fuji Keizai  
Market size and breakdown of 4.1tn yen: KIRIN



**Total 2.4tn yen → 4.1tn yen**

## Markets associated with infectious disease and aging population health needs where Kirin Group can leverage its strengths

### Strengths of each company

● **KIRIN**

● **FANCL**

● **KYOWA**

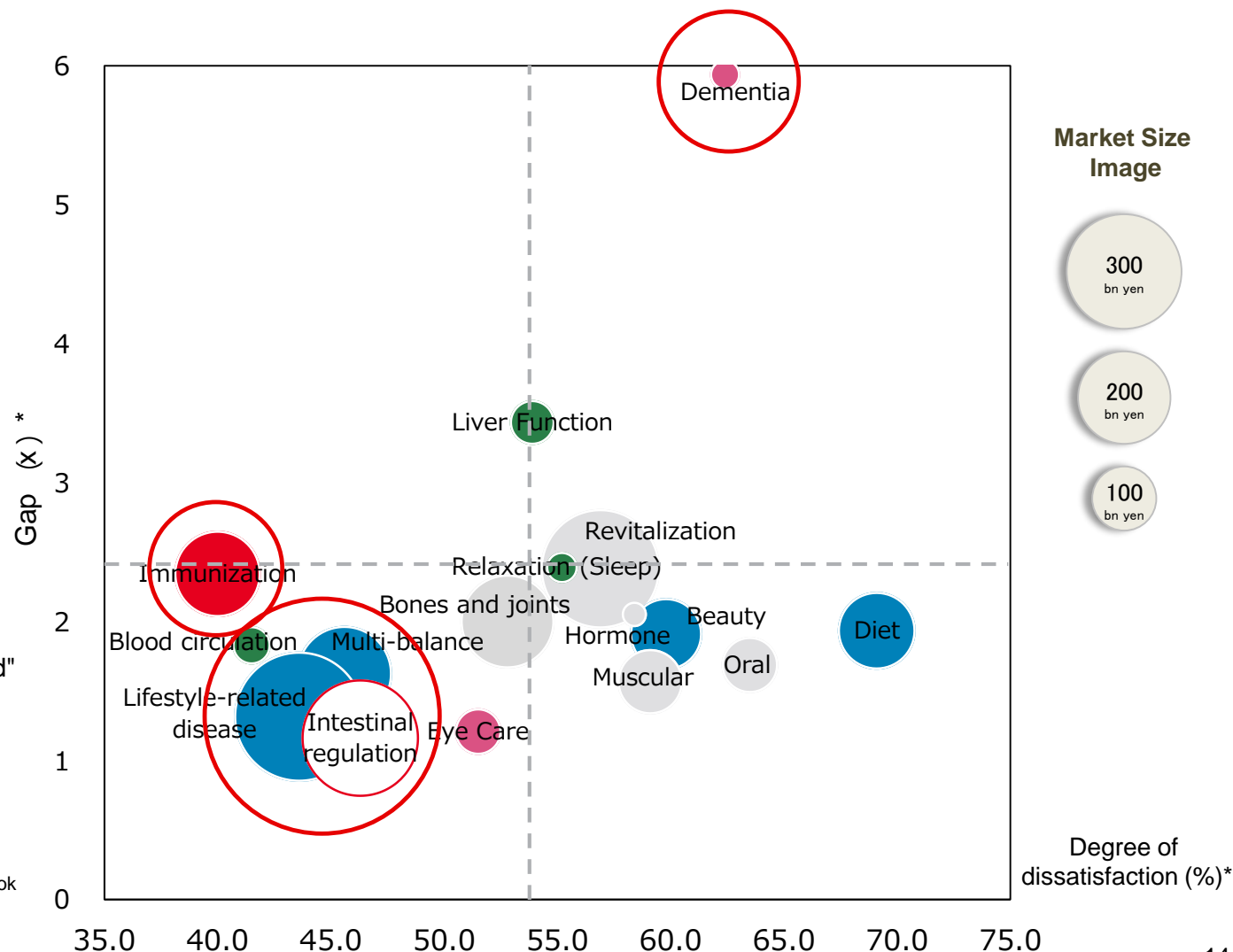
● **KIRIN × FANCL**

○ **New research areas**

\* Degree of dissatisfaction (%):  
Percentage of respondents who answered "neither", "not very satisfied", or "not satisfied" in the five-scale survey

\* Gaps (x):  
Percentage of people who want to cope /  
Percentage of people is coping

Source:  
- 2019 Kirin Health Cluster Survey  
- Market Size Forecast for 2020, H·B Foods Marketing Handbook  
2020 №1.№2, Fuji Keizai



## Kirin Group Initiatives in Health Science





















## Unlocking Value in Kyowa Hakko Bio (KHB)



# Support Framework for Revitalizing Kyowa Hakko Bio



**Leverage Kirin’s production technologies strengths and production management capabilities to revitalize KHB within two years**

|  |  Foundation Research                       |  Application Research                        |  Merchandise Development           |  Manufacturing  |  Sales Channel                                    |
|--|---|---|---|--|--|
|   | <br>Food and pharma seeds                  |   | <br>Beverage development packaging | <br>Manufacturing technology and production control engineering |  |
|   |   | <br>Functional evaluation Masking technology | <br>Formulation technology         | <br>Support   | <br>Brand and wholesale distribution Online sales |
|  | <br>Highly proprietary materials research |   |   | <br>Low-cost fermentation production technology                | <br>EC and B2B                                   |
|  | <br>Pharmaceutical discovery seeds       | Not applicable for pharmaceuticals  |   |  |  |

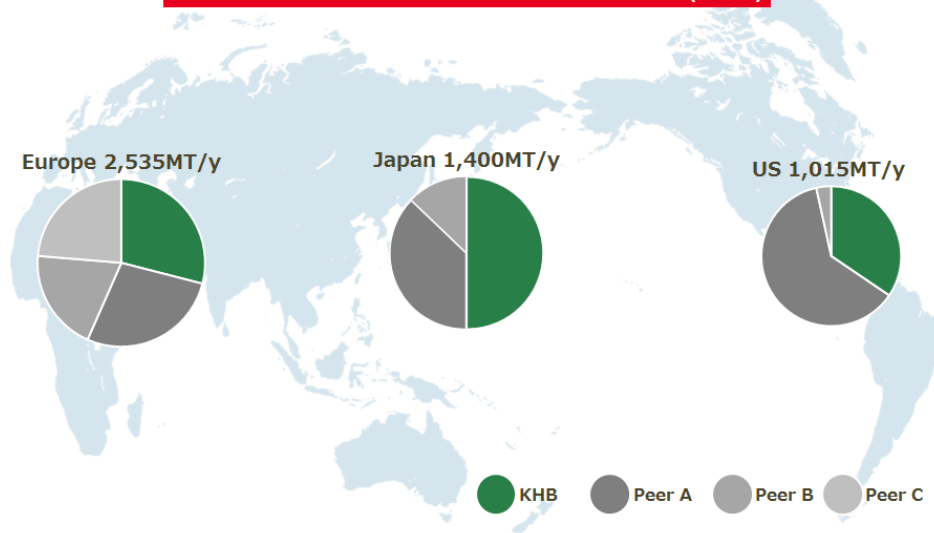
## KHB is the world's only producer of multiple specialty products

### Case 1

**Global supplier of amino acids for infusion**  
(part of grouping of four companies)

As a provider of amino acids for infusions that are widely used in surgery, Kyowa Hakko Bio is responsible for a major share of global supply

Market share in Amino acids for infusions (2017)

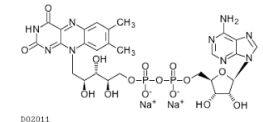


### Case 2

**As a sole supplier in Japan, KHB manufactures many integral ingredients for pharmaceuticals and infant nutrition**

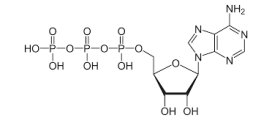
#### FAD *Flavin Adenine Dinucleotide Sodium*

Pharmaceutical vitamin applications



#### ATP *Adenosine Triphosphate*

Dizzy pharmaceutical ingredients



#### Lysine Glutamate

Ingredients for food for infants with phenylketonuria

Treating symptoms of cognitive disability due to the inherent mobility to metabolize phenylalanine, an essential amino acid

**Revitalize business in two years; transition to a high-profit business within five years; establish highly profitable product pipeline by 2027**

## Quality control issues were identified in August 2019

It was discovered that some products were not manufactured as instructed in Standard Operation Protocols

- Review quality assurance systems
- Educate employees, review procedure manuals, and automate equipment

**2020 to 2021**

**Revitalization**

- Start-up and stabilize operation of production base (plant in Hofu)
- Achieve full compliance with GMP and pharmaceutical regulations
- Rebuild production and quality control system

**2022 to 2024**

**Transition to  
high profitability  
(Structural improvements)**

- Improve production base (Hofu) capacity utilization
- Complete development of highly profitable portfolio
- Begin increasing overseas production
- Capture profits from Human Milk Oligosaccharides

**2025 to 2027**

**Dramatic growth  
(Become a highly  
profitable company)**

- Achieve dramatic growth by introducing multiple high proprietary materials to the market utilizing unique fermentation technology
- Capture profits from essential medicines
- Capture profits from anti-aging materials

**KHB's product pipeline expected to include multiple high-performance materials for food and pharma generating high profit and robust growth**

Improvement of margin

Robust growth

Kyowa Hakko Bio's projected Normalized OP

9.5bn yen

15.0bn yen

Accelerate to build high margin portfolio to achieve the target ahead of 2024

## Value drivers

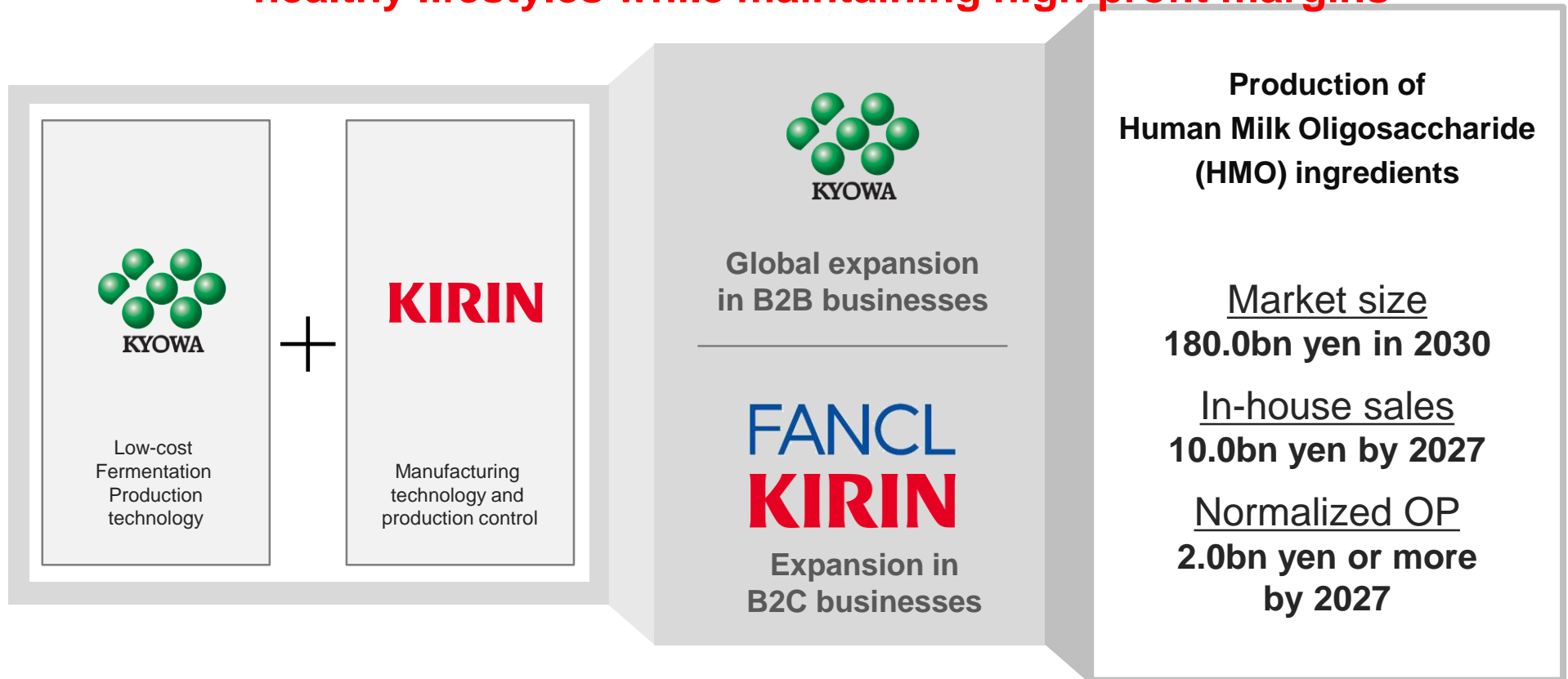
- Food: Human Milk Oligosaccharides
  - Pharma\*: essential medicines
  - Beauty\*: anti-aging material
- (\*Conventionally used natural product extraction method)

2024

2027

# Growth Scenario Example: Human Milk Oligosaccharides

**With fermentation technology that can be mass-produced at lower cost than competitors, the company will contribute to the promotion of healthy lifestyles while maintaining high profit margins**



## What is human milk oligosaccharide (HMO)?

Oligosaccharides are in human breast milk (primarily colostrum). There is evidence they support immune activation, intestinal protection, prebiotics, brain function development, etc.

## Potential use case of processed HMO through fermentation production

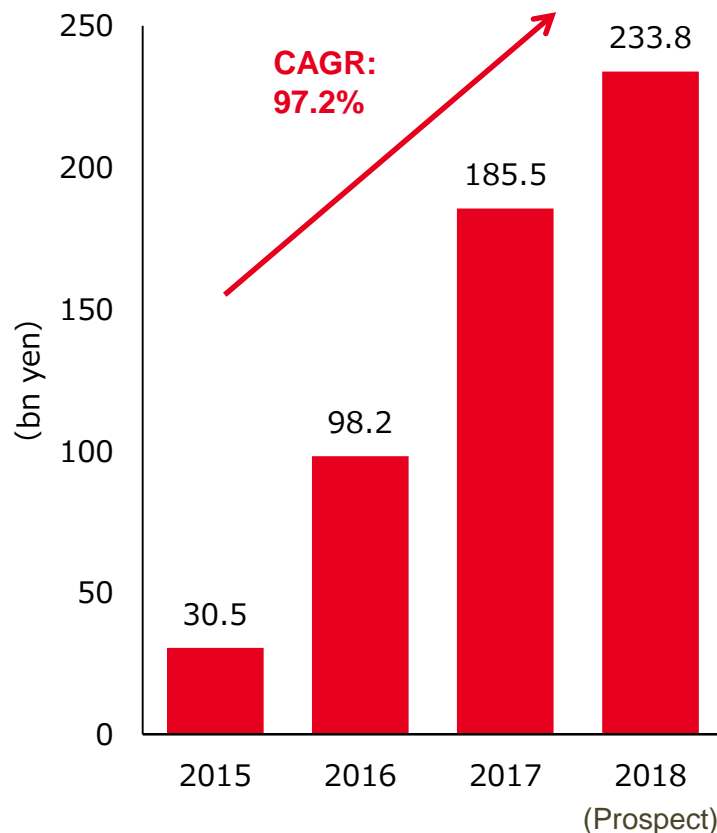
- Mixing with powdered milk to improve health of babies
- Provide the benefits of breastfeeding beyond childhood (Health and Well-being foods, etc.)

## Synergies with FANCL

# Kirin and FANCL Competitive Advantages in Foods with Function Claims (FFC)

**Kirin is a health food pioneer with strong market share and expertise**

## Growth potential of FFC



Source: TPC Marketing Research, Nikkei Telecon  
FANCL: supplement category, H・B Foods Marketing Handbook Fuji Keizai

## FANCL and Kirin's Strengths

1st  
in Japan

No.1  
FFC  
brand\*

1st  
in Japan

No.1  
function  
al non-  
alcohol  
beer  
brand\*

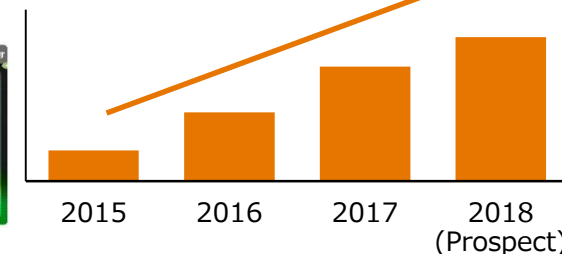
1st  
in Japan

Maintain  
and grow  
market  
share  
since  
foundation  
of FFC  
regulation

### Calolimit



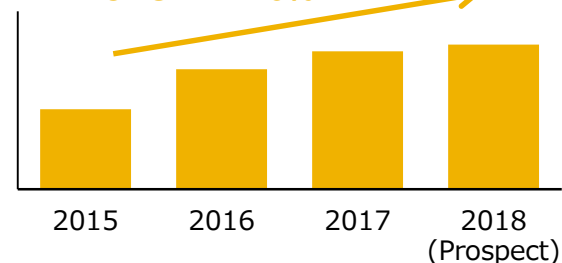
CAGR: 67.6%



### Kirin Perfect Free



CAGR: 21.8%



※ TPC MARKETING RESEARCH: MARKET ANALYSIS OF FOODS  
with FUNCTIONAL PRESENTATION 2019 and INTAGE SRI18/01-2019/10

### Calolimit



### Mets



よろこびがたぐ世界へ

**KIRIN**

**FANCL**

### Total market share of the 2 companies



## Four subcommittees exploring immediate synergy initiatives; Conducted 200+ study sessions and meetings so far

### Product development



#### R&D

#### Health and wellness

- Joint research
- Material and product development

#### Cosmetics

- Leverage Kirin technology and expertise
- Container recycling and environmental initiatives



#### Health and Wellness

#### Marketing collaboration

- Marketing based on demographics and consumer needs
- Near, medium, and long-term initiatives

### Channel infrastructure



#### Mutual utilization of infrastructure

#### Channel Infrastructure, Functional Efficiency (Cost)

##### 1. Channel Infrastructure Synergy

- Collaboration of FANCL and Kyowa Hakko Bio on mail-order / e-commerce channel
- Leverage FANCL sales channel for Koiwai Dairy and Mercian products
- Health and wellness management promotion project
- Leverage Kirin vending machines (Tappiness)
- Introduce mutual distribution and business partners

#### To streamline value chain (marketing, etc.)

- Joint production and distribution
- Review procurement
- Co-Promotion, co-PR, etc

### Exchanges



#### Cross-Promotion

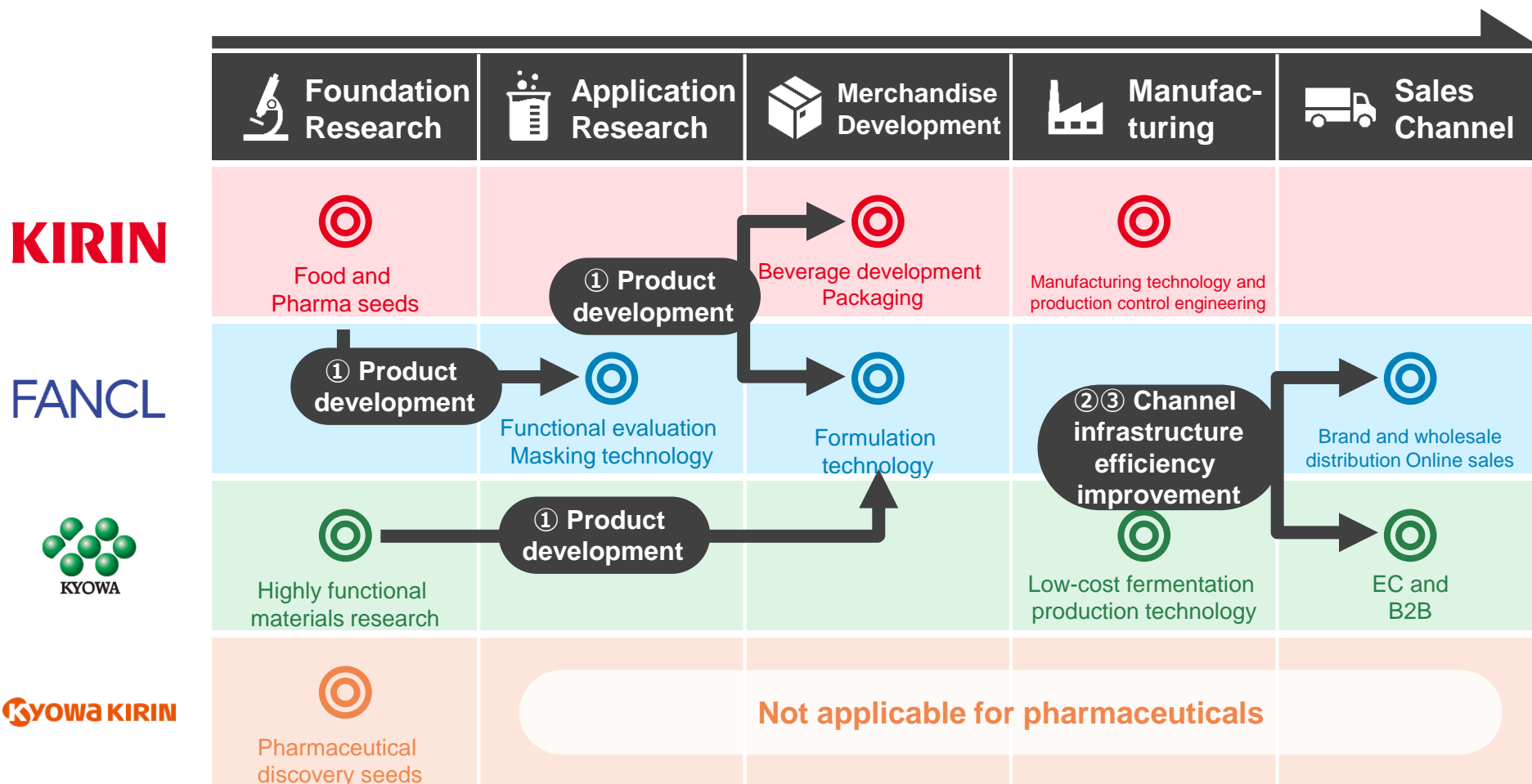
#### Promoting mutual understanding

- Employee exchanges
- Information exchanges
- Seminars and workshops
- Install Kirin vending machines in FANCL facilities



# FANCL Synergies: Complementary Relationship in the Value Chain

**Near- and medium-term synergies in (1) product development, (2) channel infrastructure, and (3) functional efficiency**

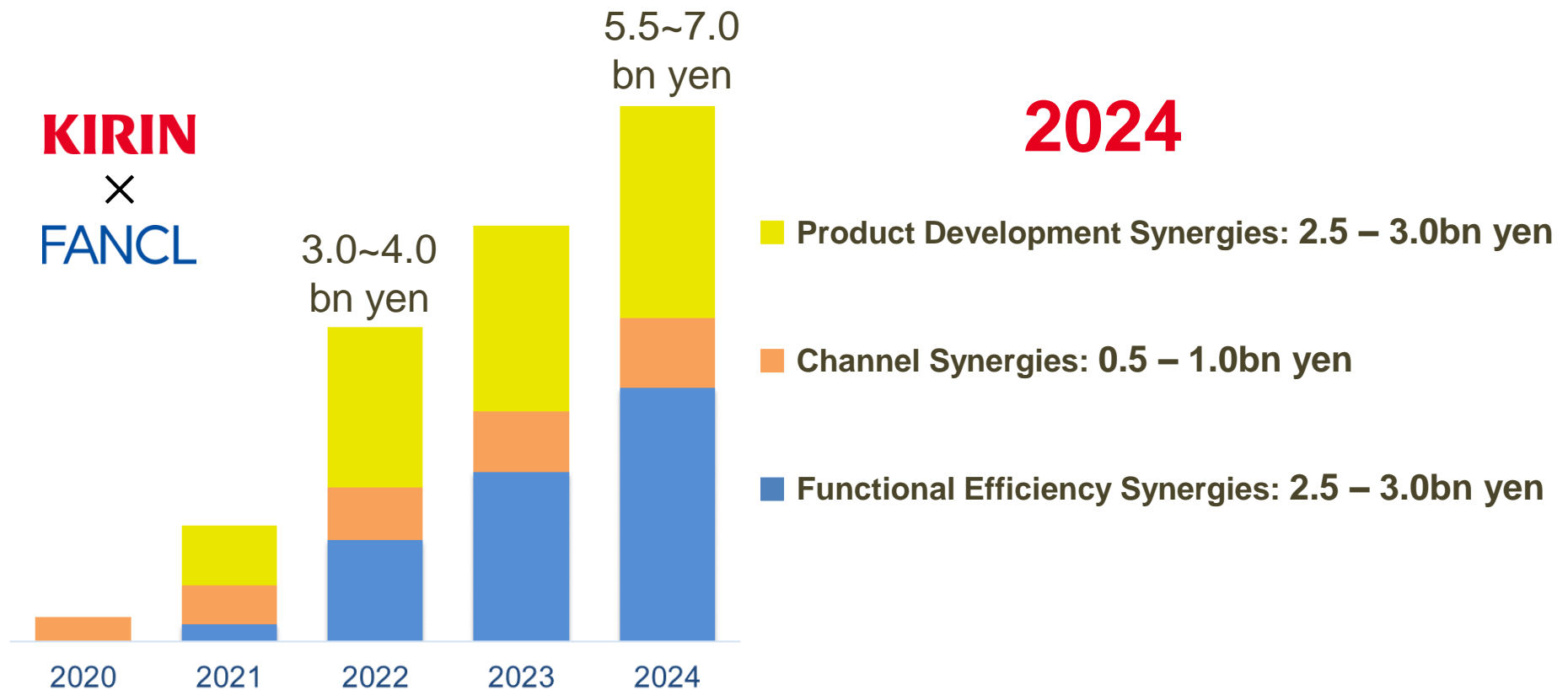


# Synergies from FANCL Partnership



**FANCL synergies to contribute ~5.5 to 7.0bn yen  
to Normalized OP by 2024**

## Contributions to Kirin Holdings' Normalized OP



# Three Areas of Synergies and Specific Initiatives

Beginning in 2020

2021 and beyond

**Normalized OP 2024**  
(for Kirin Holdings only)

## ① Product Development

Utilize both companies' materials and technologies

Leverage brands and materials to develop in the food and beverage fields according to customer needs

Develop supplements through FANCL and Kirin's channels through joint research

**+2.5 to 3bn yen**

## ② Channel

Leverage both companies' sales channels

Leverage KHB sales channel for FANCL's products

Leverage FANCL sales channel of mail-order / e-commerce and transboundary EC

Leverage FANCL sales channel for Kirin's products (Food domain)

**+0.5 to 1bn yen**

## ③ Functional Efficiency

Improve margins through cost synergies

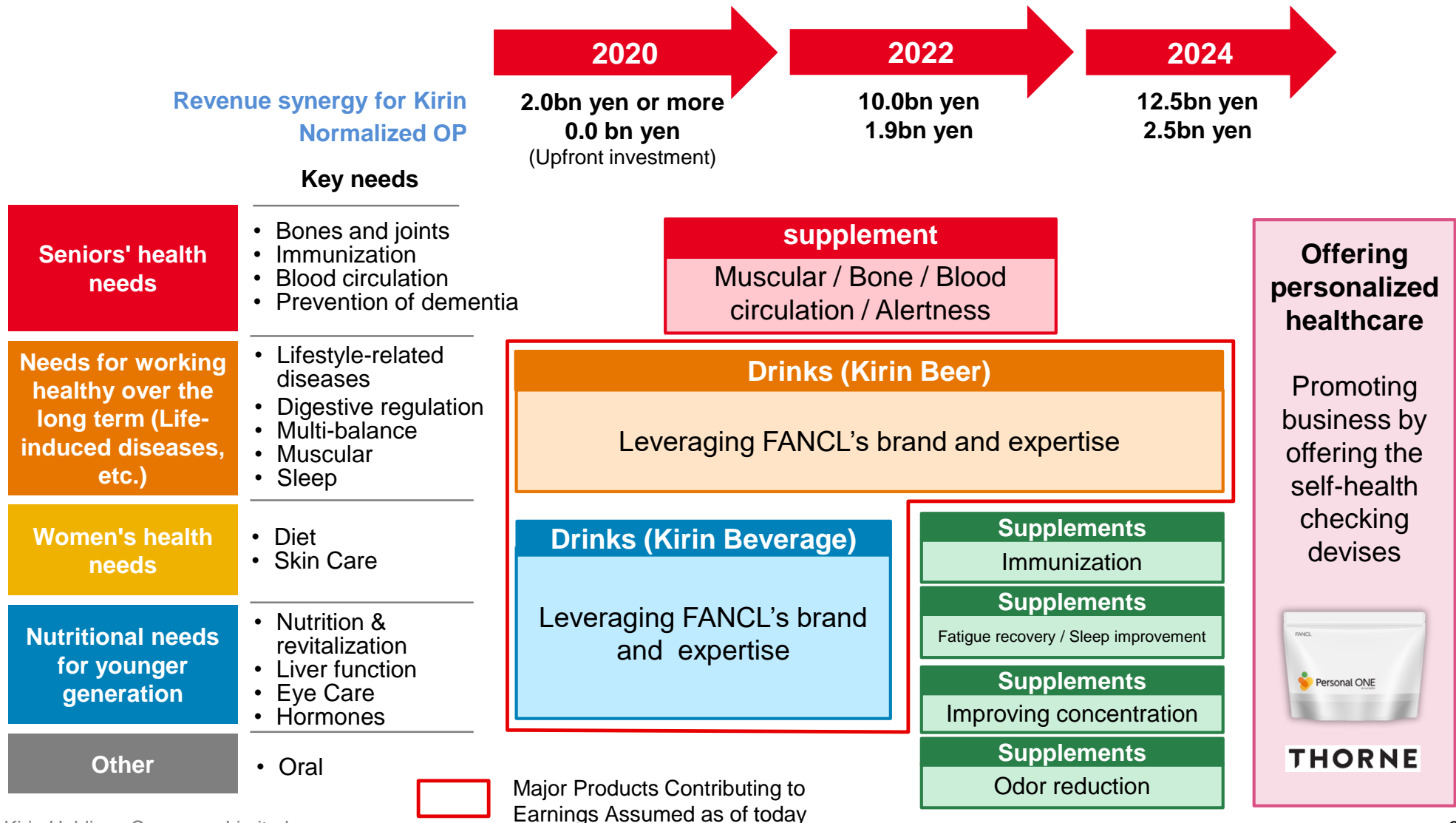
Leverage e-commerce platform and customer data (Kirin and KHB) to reduce marketing costs by optimizing marketing spends

Efficient operation of R&D and manufacturing facilities, etc.

**+2.5 to 3bn yen**

# 1. Product Development Synergies: Roadmap

## New products and supplements utilizing FANCL brands and proprietary materials

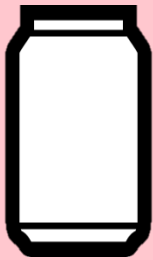


# 1. Product Development Synergies: Initiatives after Fall 2020

## Joint product development targeting launch in Fall 2020

### Kirin Beer

Non-alcohol beverage



### Kirin Beverage

Leverage FANCL brands



### FANCL

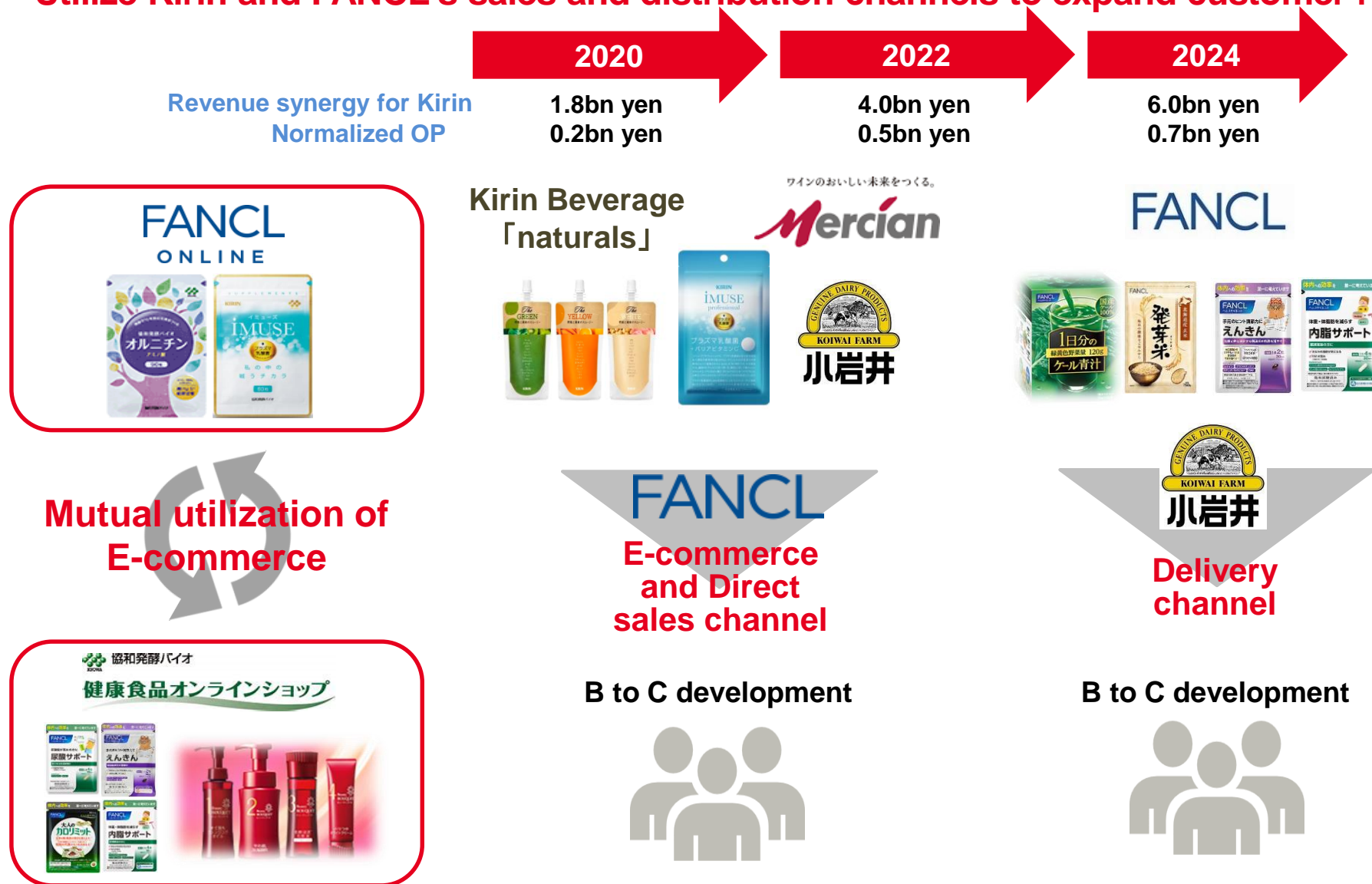
Utilize proprietary materials developed by Kirin



**Fall 2020**

## 2. Channel Infrastructure Synergies: Roadmap

Utilize Kirin and FANCL's sales and distribution channels to expand customer reach



## 2. Channel Infrastructure Synergies: FANCL and KHB

**Expand customer base and sales through inclusion of Kirin products at FANCL stores and mutual utilization of e-commerce channels**

**Reach 3mn people**

**FANCL** + Direct managed  
ONLINE stores

**90% retention rate**

協和発酵バイオ  
**健康食品オンラインショップ**

**Net sales\***

FANCL Cosmetics: **56.7bn yen**  
Supplements: **43.9bn yen** (same)

**8.5bn yen**

**Customer base**

Main users: **Women aged 30-50**  
No. of active users: **3mn people**  
% of regular mail order: **50%**

Main users: **Men aged 60+**  
No. of active users: **240,000**  
% of regular mail order: **90% or more**

**Merchandise Portfolio**

**Cosmetics: Approximately 150 products**  
**Supplements: Approximately 110 products**

**Approximately 25 products**

**Main Synergies to Kirin**

**<Increase in visitors to FANCL's e-commerce site>**  
**Promotions on FANCL's e-commerce site that sends visitors to Kyowa Hakko Bio's online store**

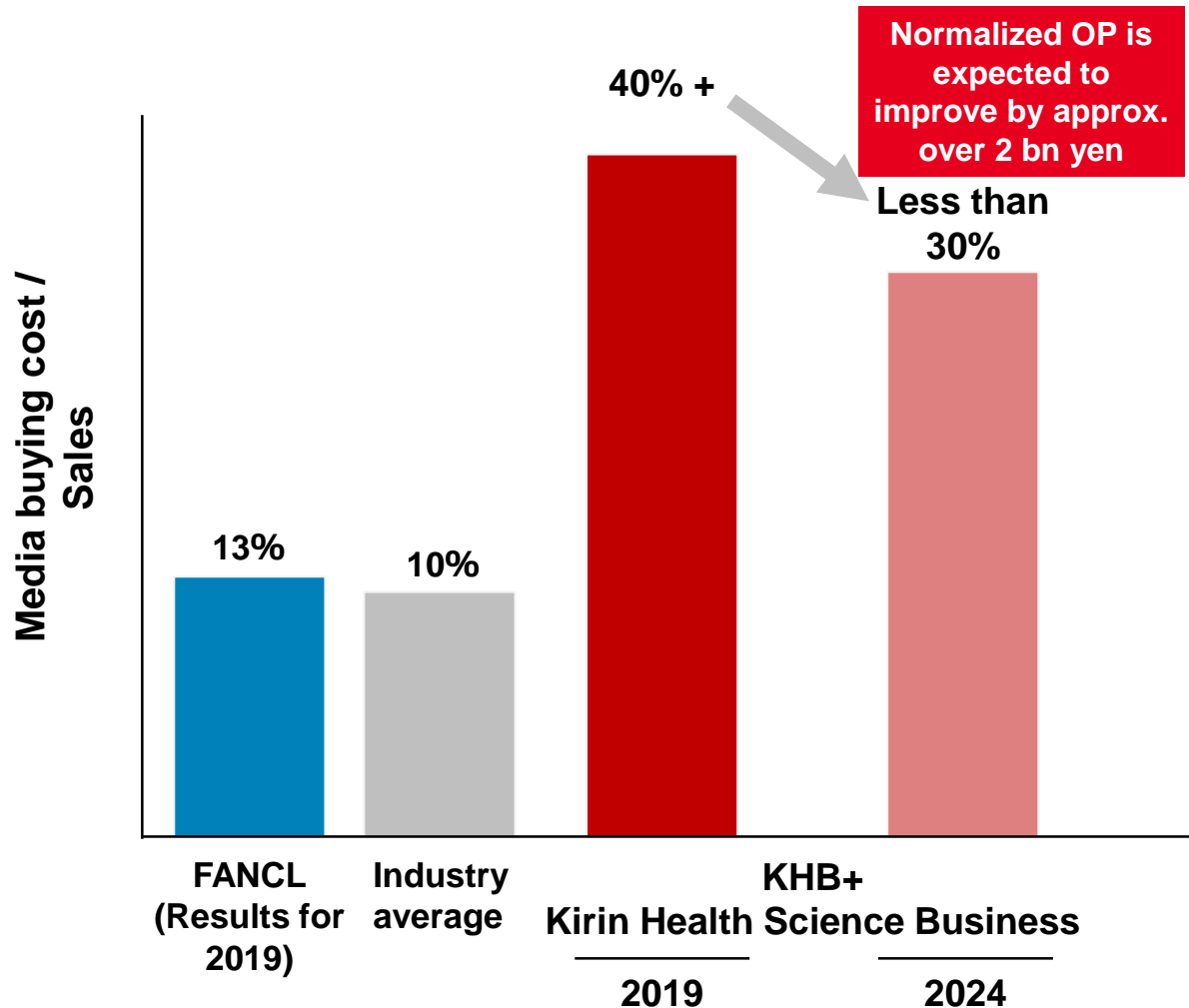


**<Increase in sold products (SKUs) at KHB>**  
**Develop tailored FANCL supplements for Kyowa Hakko Bio's customers**



### 3. Functional Efficiencies: Cost Synergies

**Reduce Health Science media buying costs by leveraging FANCL's marketing platform. Optimize marketing spend per customer by bundling existing products**



#### Factors behind high Media Buying cost

**Despite high product satisfaction...**

- **Product recognition remains low**  
Aggressive sales activities targeting new customers
- **Media buying cost per active user is high**  
Small number of SKUs and difficulty in bundling products

#### Cost reductions through collaboration with FANCL

- **Improved marketing efficiency by leveraging FANCL's in-store sales and e-commerce platform:**  
Enhancing brand recognition of Kyowa Hakko Bio while saving marketing costs
- **Expansion of Kyowa Hakko Bio's product portfolio (increase in SKUs):**  
Decrease media buying cost per customer



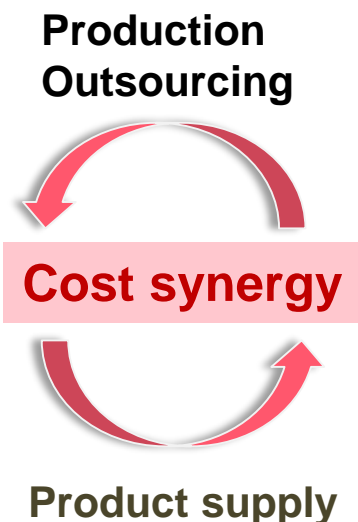
### 3. Functional Efficiencies: Joint Production Facilities

**FANCL's new manufacturing plant, set to be operational in 2021, will produce proprietary products for exclusive sale on Kyowa Hakko Bio's e-commerce site. We are also evaluating cost-reduction initiatives including development of National Brand products manufactured by Kyowa Hakko Bio.**



**FANCL**

**Mishima Factory begins operations in Spring 2021**



**Launch proprietary products only available on KHB's e-commerce site from spring 2021**

# Realization of Speedy Output (1)

## Sales through combined channels

### Product Development Synergies in Food (January)

**FANCL × Kirin-City**



With their strong reputation, enriched vegetables will be included in the regular menu in the Kirin City (Kirin restaurant)!

Sales exceed forecast by 2x;

90% of consumers were new to FANCL

### Customer referrals from Kirin's Institutional Sales Channel (February)

**FANCL**  
ONLINE

## Joint R&D generated outcome

### Skincare Synergies (January)

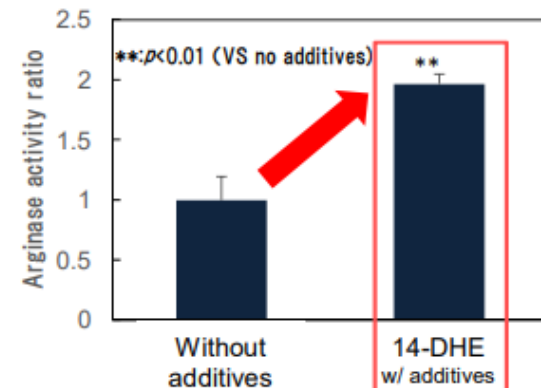
**NEW**

**KojiSterol**

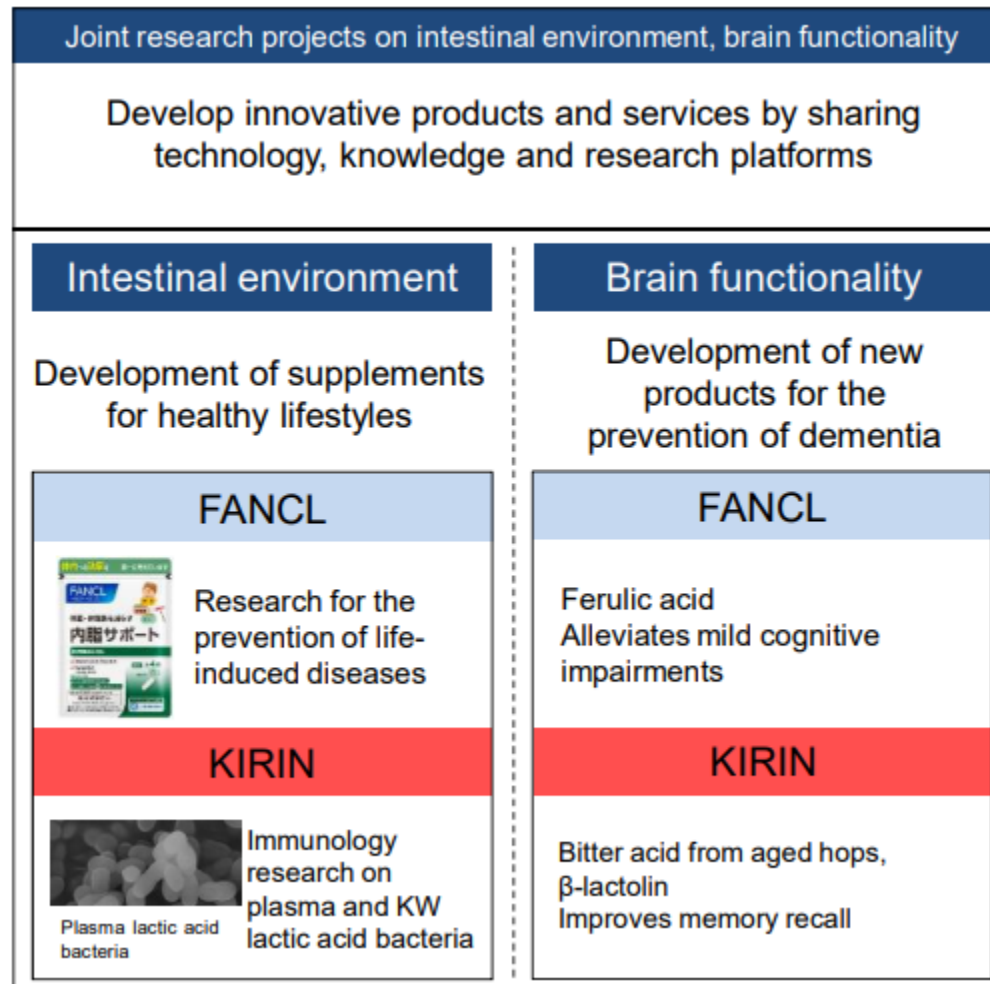
For use in anti-aging cosmetics

Discovered a component in white *koji* bacterium (14-DHE) that promotes the production of a protein (Arginase-1) associated with the functions of beautiful skin.

Results of monitoring Arginase-1 activity (skin-benefitting protein)



**Kirin's brain and immunology / intestinal business began research with FANCL.  
Additionally considering joint renal research for Kyowa Kirin**

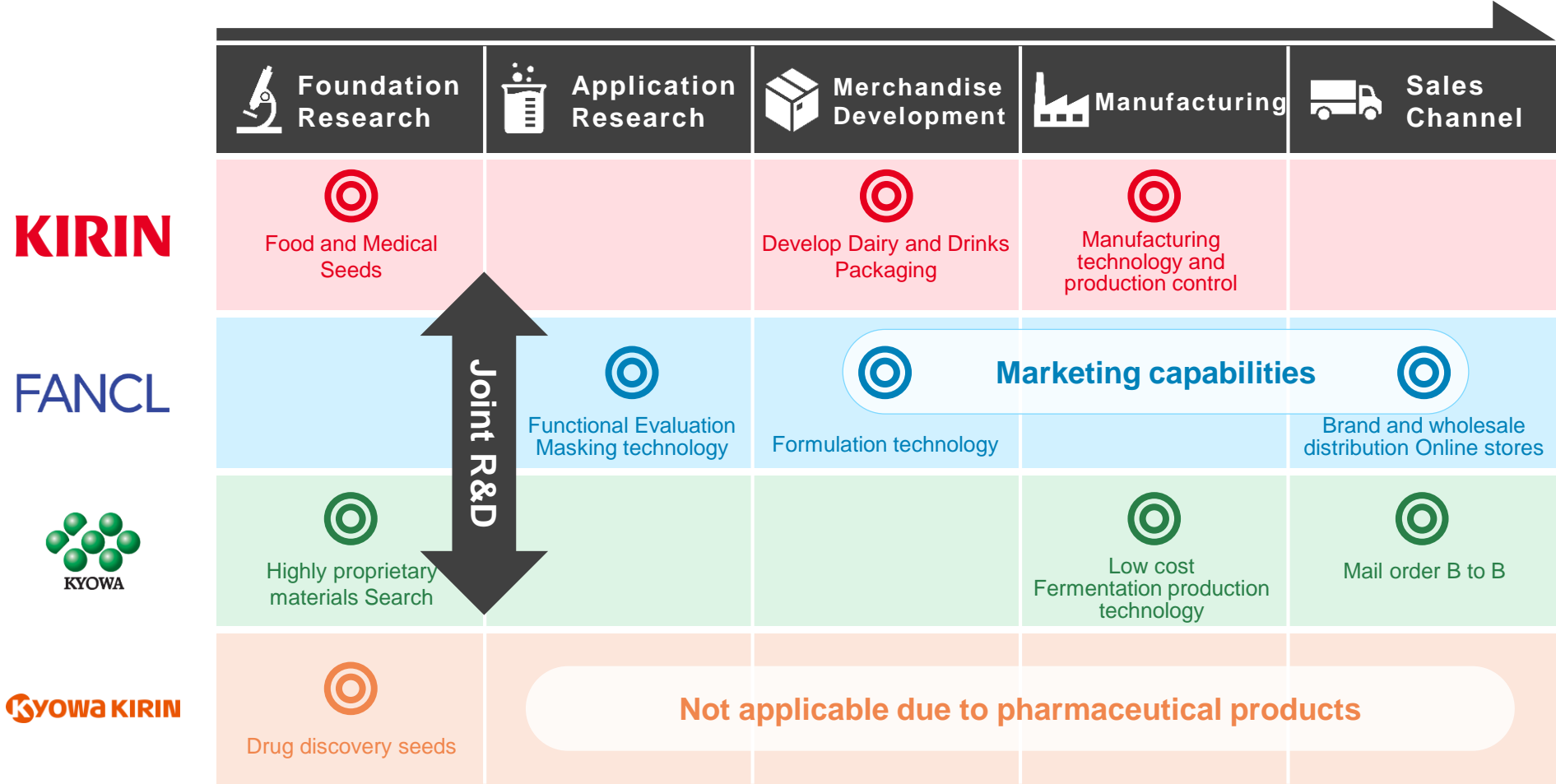


## Medium-to Long-Term Initiatives (with Kyowa Kirin)

# Opportunity in Foundation Research Centered on Seeds



Create medium- to long-term growth opportunity  
from Kirin Group R&D section joint research






# Joint R&D to Drive Shareholder Value

New products development through joint R&D (brain, immunity, bowel, and nephrology)

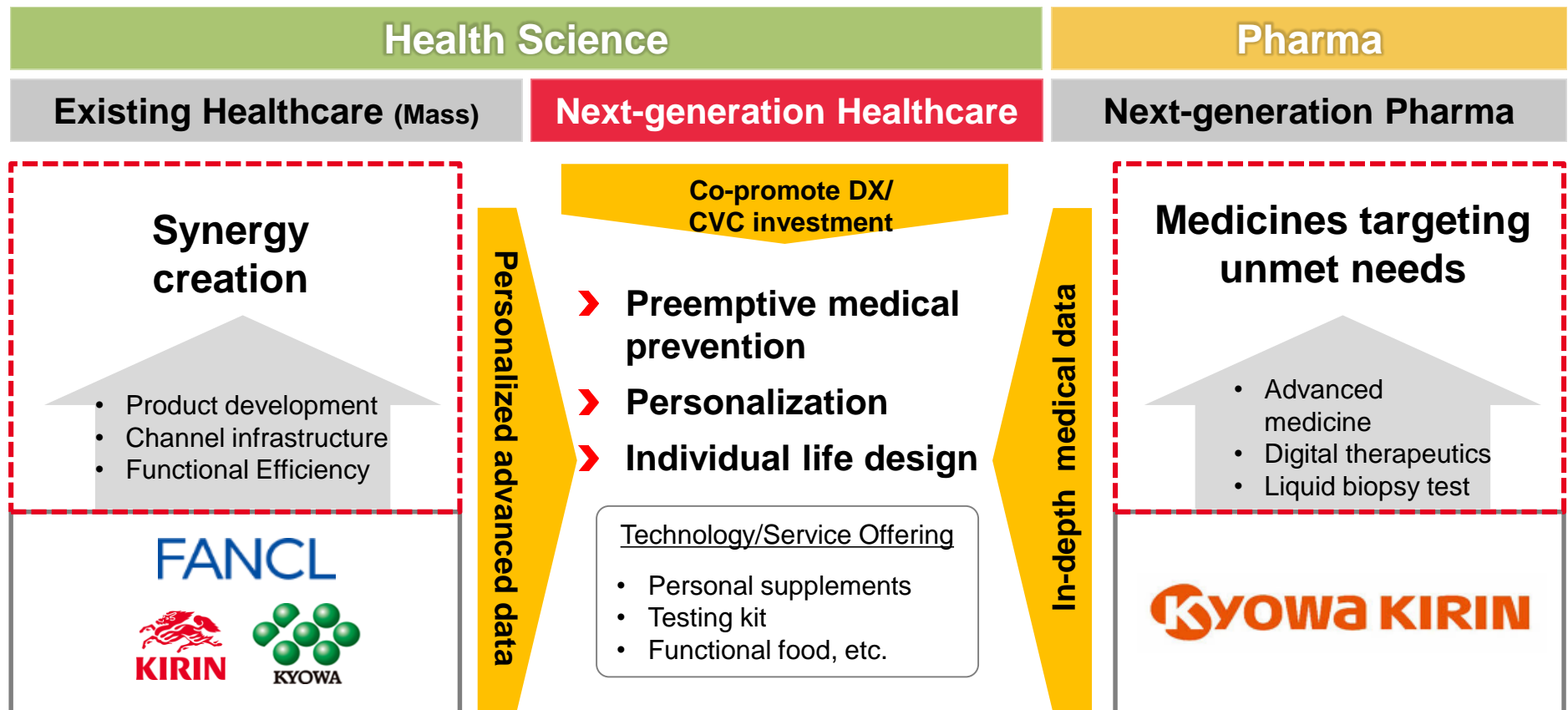


**Combine R&D in Food and Pharma to drive innovation.**  
**Kyowa Kirin and Kirin Holding to leverage expertise in three growth areas:**  
**brain health, digestive and immune systems care, and kidney health**

|                                    | Market size  | Strengths   | R&D  | Product development  |   | FY2024 Normalized OP          |
|------------------------------------|--|---|--|--|---|-------------------------------|
|                                    |  |   |  | 2020-2024 years  | FY2024 Subsequent years   |                               |
| <b>Brain</b>                       | <ul style="list-style-type: none"> <li>Brain : 104.3 bn yen</li> <li>One in five individuals 65 years or older has dementia</li> </ul>     |  <ul style="list-style-type: none"> <li>Food material with evidence</li> </ul>   | <ul style="list-style-type: none"> <li>Cutting-edge research utilizing Academic network</li> <li>Maturity hops, <math>\beta</math>-lactrine</li> <li>Ferulic acid</li> </ul> | Sales of food with functional labels in Kirin Holdings and FANCL | Brain health (Collaboration with a third party)                   | 1 bn yen                      |
| <b>Immunity / Digestive system</b> | <ul style="list-style-type: none"> <li>Immunity: 178.2 bn yen</li> <li>Digestive system: 412.6 bn yen</li> </ul>                           |  <ul style="list-style-type: none"> <li>Evidence</li> <li>R&amp;D facilities</li> </ul>  | <ul style="list-style-type: none"> <li>Kirin Holdings and FANCL Joint Study</li> <li>Lactococcus lactis strain Plasma, KW Lactobacillus</li> <li>Microbiome</li> </ul>       | Collaboration with THORNE (GutBio Enterobacteria)                | ProBio Sales of Tix/Skin Biome Products                           | 0.5 bn yen                    |
| <b>Kidney</b>                      | <ul style="list-style-type: none"> <li>Lifestyle-related diseases: 1,030.1 bn yen</li> <li>Chronic kidney disease: 13 mn people</li> </ul> |  <ul style="list-style-type: none"> <li>Pharmaceutical share more than 5 percent</li> <li>Strong relationships with academic institutions</li> </ul> | <ul style="list-style-type: none"> <li>Kirin Holdings /Kyowa Kirin Joint Research</li> <li>Prevention of Chronic Kidney Disease</li> </ul>                                   |  | Licensing Introduce products/ Sales of foods with function claims | 0.1-0.3 bn yen (after FY2027) |

## Next-generation healthcare including pre-symptomatic care, preventive medicine, personalized healthcare and solutions applicable across generations

- (1) Incorporate initiatives incl. THORNE, etc. with FANCL's personalized business launched in 2020
- (2) Co-promote Digital Transformation (DX) to contribute to business growth utilizing client data
- (3) Acquire required assets incl. Corporate Venture Capital (CVC) investment to establish and foster new businesses

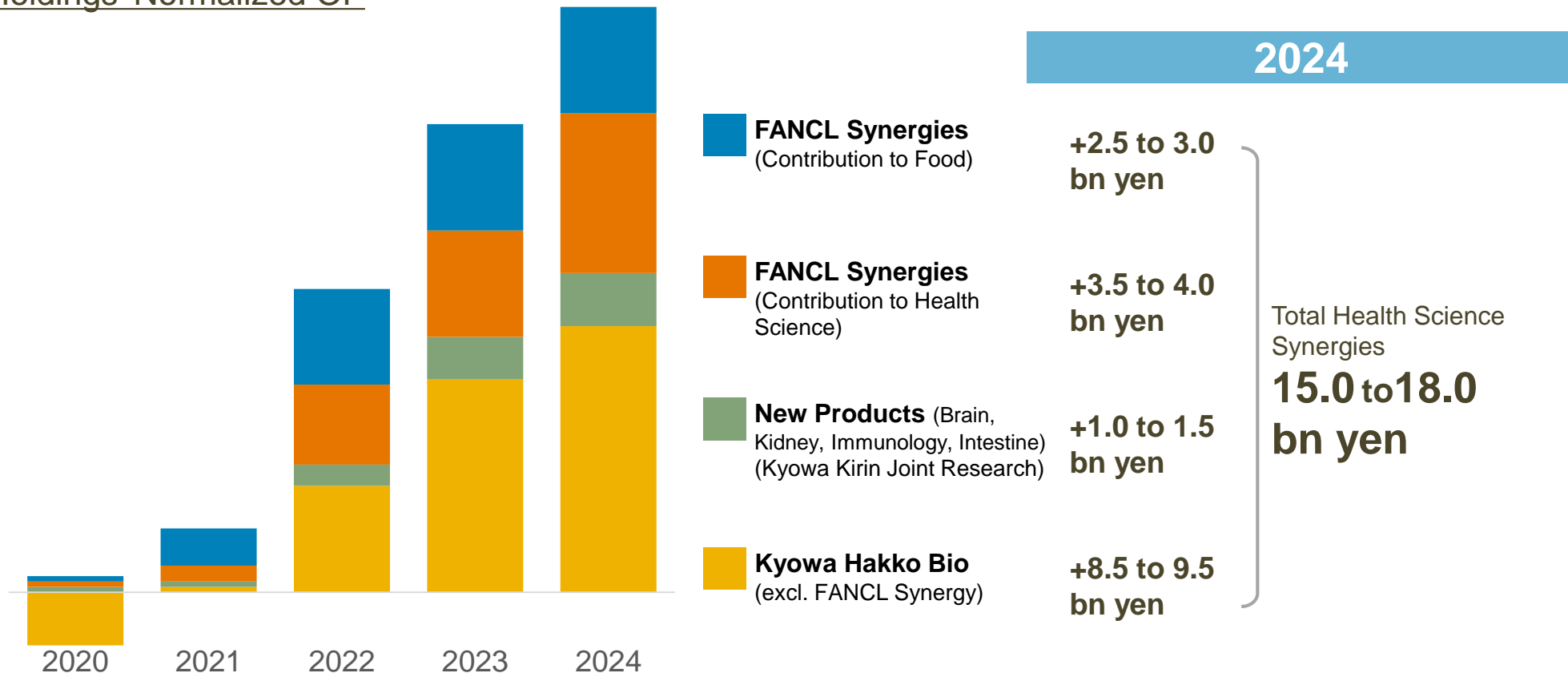


# Profit Contributions from Health Science

**15.0 – 18.0bn yen of Normalized OP from Health Science in five years,  
including 2.5 – 3.0bn yen of FANCL synergies in Food domain**

Contributions to Kirin  
Holdings' Normalized OP

**+15.0 to 18.0 bn yen**



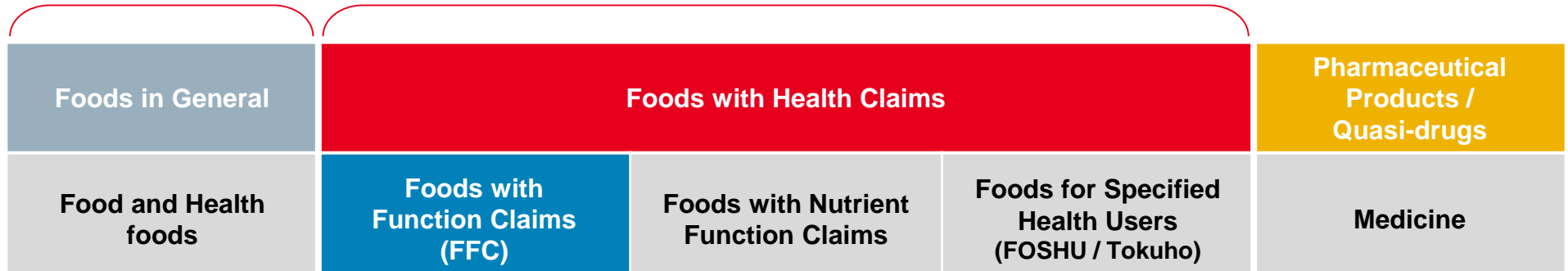


# APPENDIX

# What is Foods with Function Claims (FFC) under Japanese regulation?

**Cannot** label a  
function claim

**Can** label a  
function claim



Unlike FOSHU (or Tokuho), the product is not individually pre-approved by the Secretary General of the Consumer Affairs Agency, so operators must display their labeling at their own risk and based on scientific evidence from clinical trials.

**Scientific evidence on safety / functionality and trust in the brand are critically important**

Growth potential of FFC

