

# Nature's

**Unique microbial  
solutions platform  
supports high  
organic growth**

no

**SUSTAINABLY**

**CHR HANSEN**

*Improving food & health*

# Safe harbor statement

This presentation contains forward-looking statements that reflect management's current views with respect to certain future events and potential financial performance.

Forward-looking statements are other than statements of historical facts. The words "believe," "expect," "anticipate," "intend," "estimate," "outlook," "will," "may," "continue," "should" and similar expressions identify forward-looking statements.

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## Cees de Jong

President & CEO  
Executive Board member

Cees de Jong joined Chr. Hansen in April 2013 as CEO. Prior to this Cees de Jong held various managerial and board positions within the biopharmaceutical and food industry. His professional career started in 1989 with Gist-Brocades (NL) where he held different positions including Managing Director for the Industrial Pharmaceutical division. Following Gist-Brocades' acquisition by DSM in 1998, Mr. de Jong was appointed President of the Anti-Infectives division of DSM.

In 2000 he joined Campina as President for the Industrial Products Division, and from 2003 to 2007 he worked for Quest International and ICI as Group Vice President and member of the Board, heading up the Flavour Division. In 2007 Mr. de Jong joined Crucell as Chief Operating Officer and member of the Board, until 2011 when the company was acquired by Johnson & Johnson.

Cees de Jong will step down as President & CEO for Chr. Hansen on 1 June 2018.



## Mauricio Graber

President & CEO  
Executive Board member  
As of 1 June 2018

Mauricio Graber was until 1 April 2018 President of the Flavours Division of Givaudan S.A. and a member of Givaudan's Executive Committee. His professional career started in 1989 with The Nutrasweet Company in the USA as Business Development Manager. After two years in the role, he returned to Mexico in 1991 to become Regional Head of North Latin America.

In 1995, he joined the US-based flavour company Tastemaker as Regional President of Latin America. In 1997, Tastemaker was acquired by the industry leader Givaudan, and subsequently Mr. Graber was appointed Regional President of Latin America of the combined regional business. From his new base in Brazil, he continued in that role until 2006 when he was appointed President of the Flavours division based in Switzerland.

Mauricio Graber will take over as President & CEO for Chr. Hansen on 1 June 2018.



## Thomas Schäfer

Executive Vice President & CSO  
Executive Board member

Thomas Schäfer joined Chr. Hansen in November 2017 as Executive Vice President & Chief Scientific Officer bringing with him 23 years of experience from Novozymes. As a German national, Thomas Schäfer's professional career started in 1994 where he joined the enzyme division of Novo Nordisk (in 2000 split into Novozymes) in Microbial Screening as a PostDoc. Throughout his years in Novozymes, he has held various senior positions primarily within R&D and Business Development. In 2013 Thomas Schäfer played a key role in making the BioAg Alliance with Monsanto a reality. This led to three years of expatriation in North Carolina, US, where he established Novozymes' BioAg Application Research unit in RTP.

Thomas Schäfer's experience spans across both bacteria and enzymes under the umbrella of which he is further the co-inventor on a number of patents as well as publisher of several scientific papers and publications with WWF, WEF and the German Bioeconomy council.



## Soeren Westh Lonning

Executive Vice President & CFO  
Executive Board member

Soeren Westh Lonning joined Chr. Hansen in October 2007 as Director of Corporate Development. In the period 2008-2013 he held various positions within Chr. Hansen's finance organization incl. Vice President of Business Finance & Sourcing and Finance Director Cultures & Enzymes Division and Health & Nutrition Division. In 2013 Mr. Lonning was appointed Country Manager for South West Europe as well as Finance Responsible for the Europe, Middle East & African region working out of Paris, France. In August 2015 Mr. Lonning returned to Denmark and was appointed Executive Vice President and CFO of Chr. Hansen.

Prior to joining Chr. Hansen, Mr. Lonning was Investment Manager at Axcel Private Equity (2005-07) and Associate with McKinsey & Co. (2002-2004).



## Christoffer Lorenzen

Executive Vice President, Food  
Cultures & Enzymes  
Executive Board member

Christoffer Lorenzen joined Chr. Hansen as Director, Sales Development, Global Sales in 2008. In 2011, he was appointed Vice President, Area Country Manager, responsible for Central & Eastern Europe and in 2013 he assumed the position as Senior Vice President for Commercial Development (Marketing/Product Development/Product management) in the Cultures & Enzymes Division. As of 2016, Christoffer Lorenzen has headed up the largest business area at Chr. Hansen, Food Cultures & Enzymes, as Executive Vice President and since 2018 member of the Executive Board.

Besides his role in Chr. Hansen, he is the Vice Chairman of The Board in EFFCA (European Food and Feed Cultures Association) and he is a member of the board of directors in Hamlet Protein and Schultz.

Prior to joining Chr. Hansen, he held various positions in Lundbeck.



## Christian Barker

Executive Vice President, Health &  
Nutrition

Christian Barker joined Chr. Hansen in May 2012, as head of a Corporate Strategic Development function reporting to the CEO. In August 2013 Mr. Barker was appointed EVP and Head of the Health & Nutrition Division.

Prior to joining Chr. Hansen, Mr. Barker was a partner at McKinsey & Company, where he spent 15 years serving global clients on a range of topics including growth strategy, M&A, business building, and restructuring. Mr. Barker joined McKinsey in Copenhagen in 1996, worked for McKinsey in London and Buenos Aires, and was based in New York/New Jersey from 1999 to 2010 before returning to Copenhagen.



## Jacob Vishof Paulsen

Executive Vice President,  
EMEA & North American regions

Jacob Vishof Paulsen joined Chr. Hansen in October 2006 as Sales & Business Development Director in Global Sales. He was later appointed Area Country Manager for Central East Europe and spent one year at the Chr. Hansen office in Parma, Italy. In April 2011 Mr. Vishof took up the position as Regional Vice President for Europe. In 2013 he was appointed Group VP and Head of the European, Middle Eastern and African regions with report to the CEO.

In 2016 Mr. Vishof was appointed EVP of the European, Middle Eastern, African & North American regions.

# Agenda

<b>Time</b>	<b>Presenter</b>	<b>Main topics</b>
12:30 – 12:50	<b>Cees de Jong</b> , CEO	Nature's No. 1 – Sustainably
12:50 – 13:25	<b>Christoffer Lorenzen</b> , EVP	Leverage the full potential of Food Cultures & Enzymes
13:25 – 14:00	<b>Christian Barker</b> , EVP	Develop the microbial platform in Health & Nutrition
14:00 – 14:20	Break	
14:20 – 14:40	<b>Thomas Schäfer</b> , CSO	R&D as a competitive advantage
14:40 – 15:00	<b>Jacob Vishof Paulsen</b> , EVP	Commercial excellence and market mapping
15:00 – 15:20	<b>Søren Westh Lonning</b> , CFO	Financial targets
15:20 – 15:25	<b>Cees de Jong</b> , CEO	Closing remarks
15:25 – 15:35	Break	
15:35 – 17:00 3 x 25 mins	<b>Q&amp;A break-out sessions</b> Whole team participates in 3 groups	Team 1: Cees de Jong, Christoffer Lorenzen and IR Team 2: Thomas Schäfer, Christian Barker and IR Team 3: Jacob Vishof Paulsen and Søren Westh Lonning

# NN1 STRATEGY

## Nature's No. 1 – Sustainably

Cees de Jong



Nature's

no

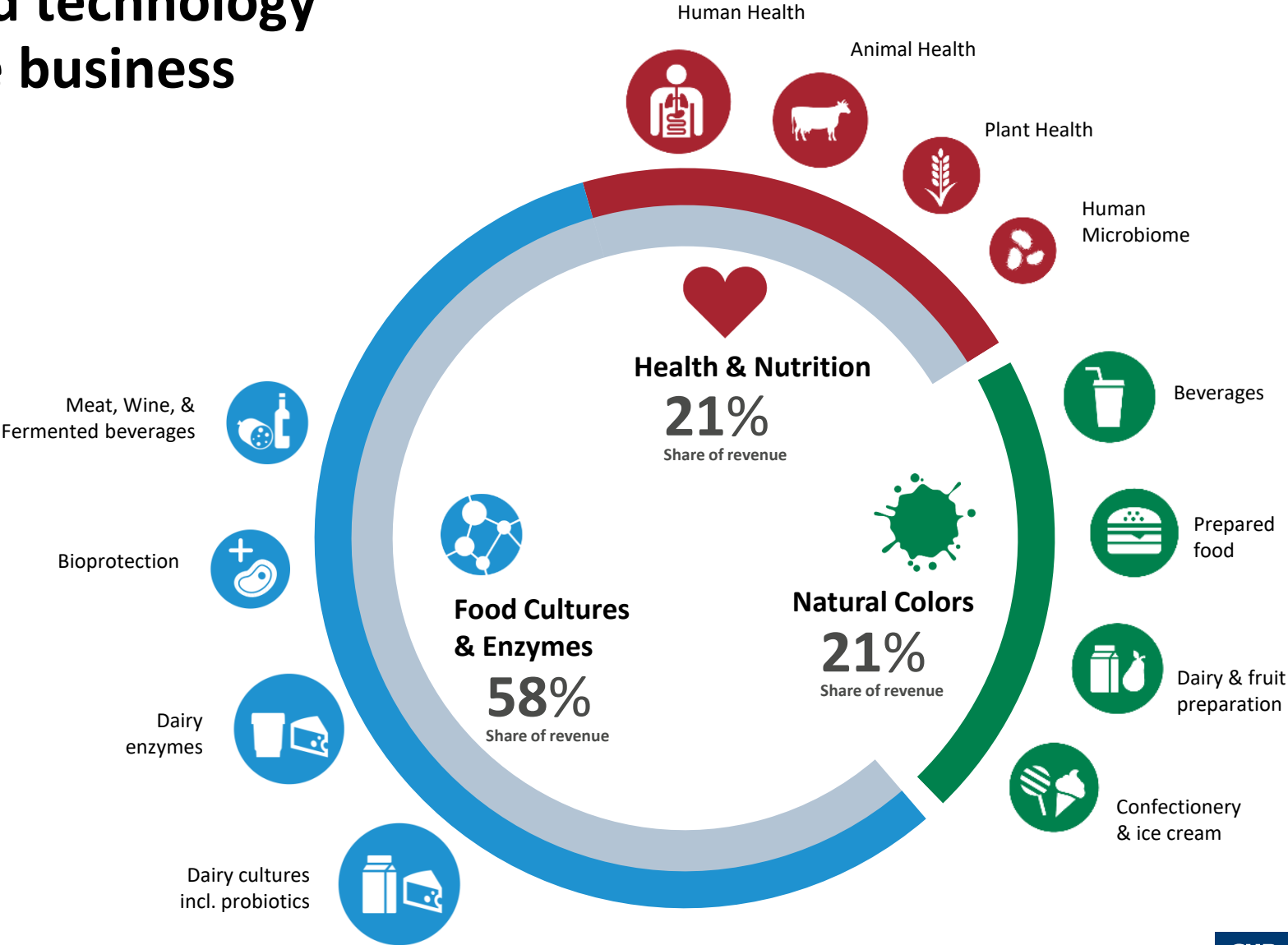
SUSTAINABLY

Together, we deliver natural innovative solutions that address global challenges by advancing food, health, and productivity.

# We are market and technology leaders in our core business

## Shared R&D platform – the Microbial Platform

Food Cultures & Enzymes and Health & Nutrition share a common research platform, and production method. The R&D platform is a process of screening, developing and upscaling of microbes. Production is the optimization of recipes, flows and infrastructure for the fermentation of microbes. Together: **The Microbial Platform.**





# Strong mega trends continue to support our business

## The trend



**Growing world population and resource scarcity**



**“Real foods” and consumerism**



**Aging population and increasing health care costs**



**Urbanization and industrialization**



**Technology breakthroughs**

## Our opportunity

Need for innovation to improve productivity and reduce food waste

Optimization of recipes to meet clean label demands

Need for cheaper and preventive solutions

Enhanced value of potential markets

Scientific evidence of benefits from good bacteria



# How did we do since 2016?



## FOOD CULTURES & ENZYMES

Leverage the full potential of Food Cultures & Enzymes



## HEALTH & NUTRITION

Develop the microbial platform in Health & Nutrition



## NATURAL COLORS

Create further value in Natural Colors

### Drive penetration of new innovation

- ✓ Bioprotection as a new lighthouse
- ✓ New platforms for dairy

- ✓ Expand existing business
- ✓ Develop plant protection
- ✓ Explore and develop Human Microbiome

- ✓ Expand FruitMax® range of coloring foodstuff

### Reinforce position in growth markets

- ✓ Establish direct market presence in key emerging markets

- ✓ Increase penetration of Human and Animal Health products

- ✓ Drive US conversion and secure APAC growth

### Generate fuel for growth

- ✓ Drive scalability through new capacity in Copenhagen

- ✓ Reinvest in future growth







- ✓ Restore profitability

- ✓ Continued conversion
- ✓ Commercial excellence

- ✓ Commercial excellence

- ✓ Continued conversion
- ✓ Commercial excellence

# We have achieved our financial targets, except for organic growth in Health & Nutrition

	Old long-term financial ambitions	Progress 2014/15 – 2016/17
<b>Organic revenue growth</b>	<b>8-10%</b>	<b>11% CAGR</b> ✓
 <i>Food Cultures &amp; Enzymes</i>	<i>7-8%</i>	<i>10% CAGR</i> ✓
 <i>Health &amp; Nutrition</i>	<i>+10%</i>	<i>8% CAGR</i> ÷
 <i>Natural Colors</i>	<i>Around 10%</i>	<i>14% CAGR</i> ✓
<b>EBIT margin b.s.i.</b>	<b>Increasing</b>	<b>27.1% to 28.9%</b> ✓
 <i>Food Cultures &amp; Enzymes</i>	<i>Increasing</i>	<i>31.5% to 34.5%</i> ✓
 <i>Health &amp; Nutrition</i>	<i>Around 30%</i>	<i>Avg. of ~29%</i> ✓
 <i>Natural Colors</i>	<i>Increasing</i>	<i>8.3% to 12.9%</i> ✓
<b>Free cash flow before acquisition, divestments and special items</b>	<b>Increasing</b>	<b>24% increase</b> ✓

# Our Natural Colors business presents an attractive growth opportunity


## Key messages

Attractive growth potential from conversion and coloring foodstuff

Transformation project completed

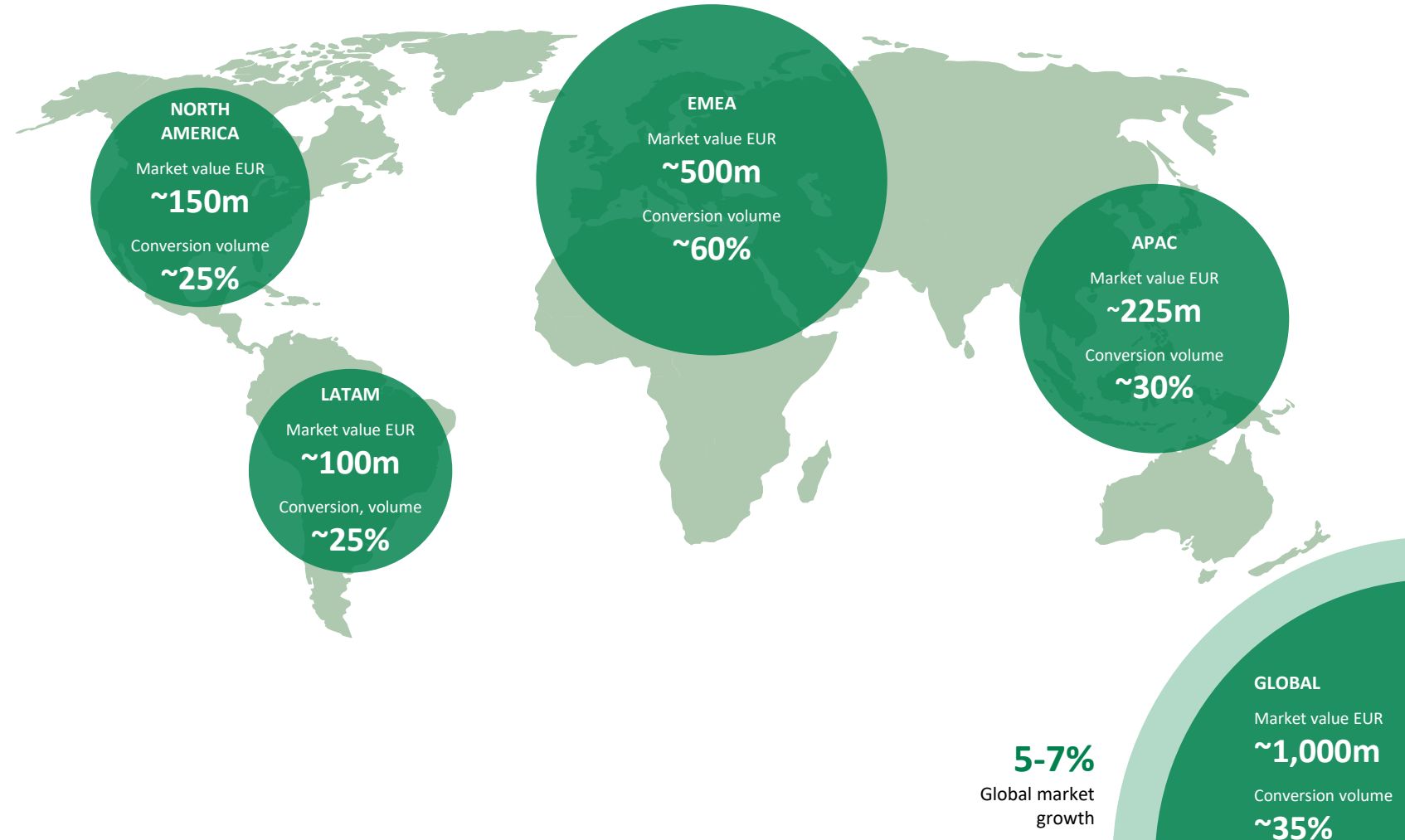
Limited synergies between Natural Colors and our microbial platform

## Main trend and projected value

 Demand for cleaner, healthier and more natural products

Projected 2030 market value of EUR 2.0 - 2.5bn

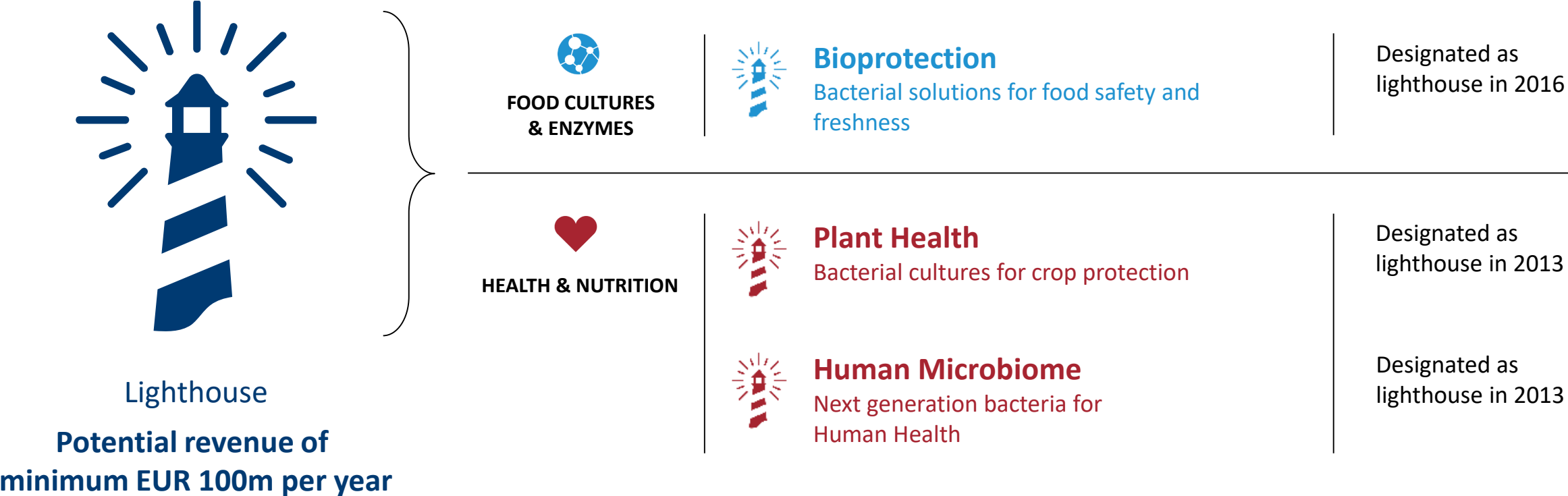
## Current market overview



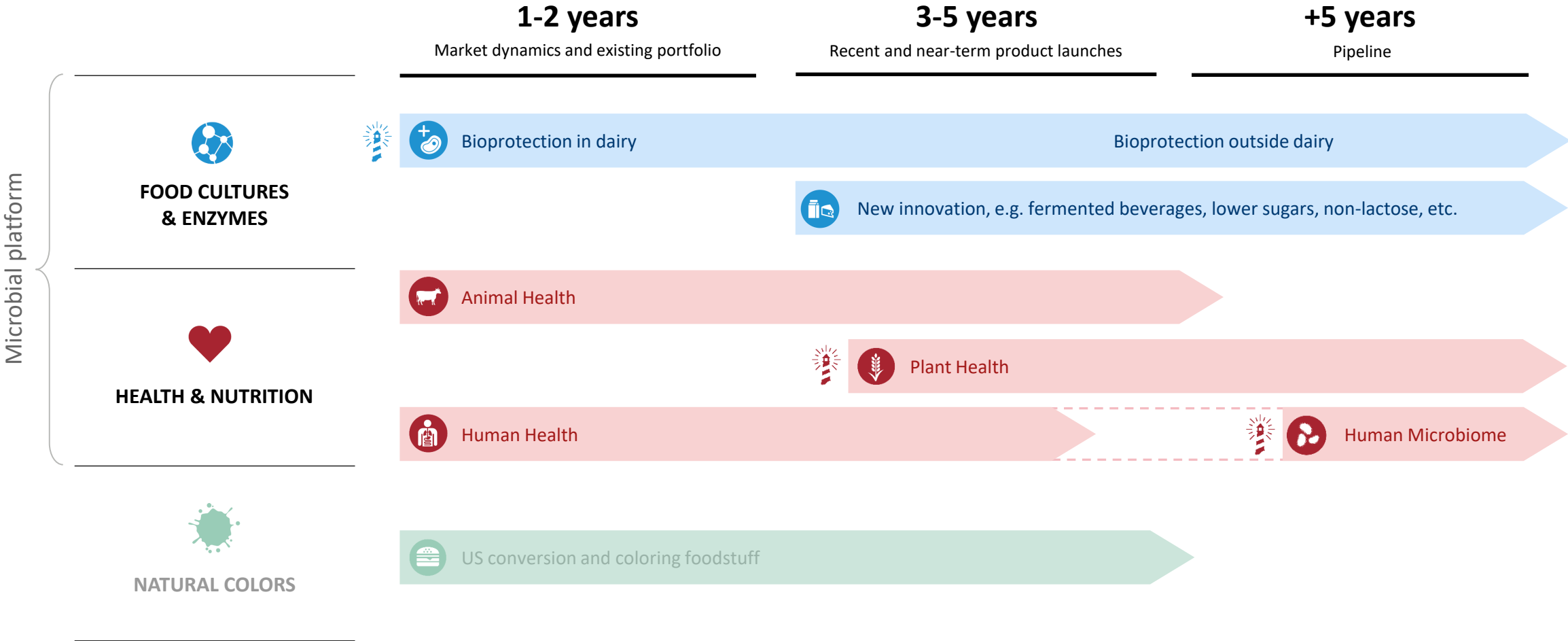
Source: Euromonitor and management estimates.

Note: Market value measured as Food & Beverages Natural Colors including Coloring Foods, and excluding Caramel colors (approximately EUR 200m)

# Our three lighthouses address challenges within food safety, agriculture and public health



# In addition to the core dairy business, the microbial solutions platform is a key driver for strong growth





# Evolution, not revolution



## FOOD CULTURES & ENZYMES



## HEALTH & NUTRITION



## NATURAL COLORS

**Leverage the full potential of Food Cultures & Enzymes**

**Develop the microbial platform in Health & Nutrition**

**Create further value in Natural Colors**

### Drive penetration of new innovation

- ▶ Continue to prioritize core dairy business
- ▶ Develop adjuncts and adjacencies
- ▶ Drive Bioprotection lighthouse to EUR 200m by 2025

- ▶ Drive new products for Human Health (incl. Microbiome) and Animal Health
- ▶ Invest in Plant Health platform to unlock potential of EUR 100m by 2025

- ▶ Expand FruitMax® range of coloring foodstuff

### Reinforce position in growth markets

- ▶ Further strengthen global market presence
- ▶ Application support in core adjacencies

- ▶ Human Health: Expansion into emerging markets and growth segments
- ▶ Strengthen route-to-market in Ag businesses

- ▶ Drive US conversion and secure APAC growth

### Generate fuel for growth

- ▶ Drive scalability in supply chain
- ▶ Digitalize core processes

- ▶ Reinvest in future growth

- ▶ Continue drive to restore profitability

# We are a front-runner on sustainability



## Better farming

We help feed the growing population by promoting sustainable agriculture

**Expand reach of natural plant protection by 25m hectares (2025)**



## Good health

We improve global health through healthier, safer and more products

**Launch 6 new products with a documented health effect (2022)**



## Less waste

We help customers reduce food waste and improve yield and productivity

**Reduce global yogurt waste by 1.2m ton (2022)**



# 81%

**81% of Chr. Hansen's revenue contributes to the UN Global Goals**

- validated by PWC



**NN1 STRATEGY**

# Key Messages

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**Nature's No.1  
Sustainably –  
evolution, not  
revolution**

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**Macro trends,  
including global focus  
on sustainability, will  
support Chr. Hansen**

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**Unique microbial  
solutions platform  
supports high organic  
growth**



# FC&E strategy

**Leverage the full potential of  
Food Cultures & Enzymes**

Christoffer Lorenzen



## Key Messages

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**Strong competitive position in the Dairy market**

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**Technology base relevant and 'on trend'**

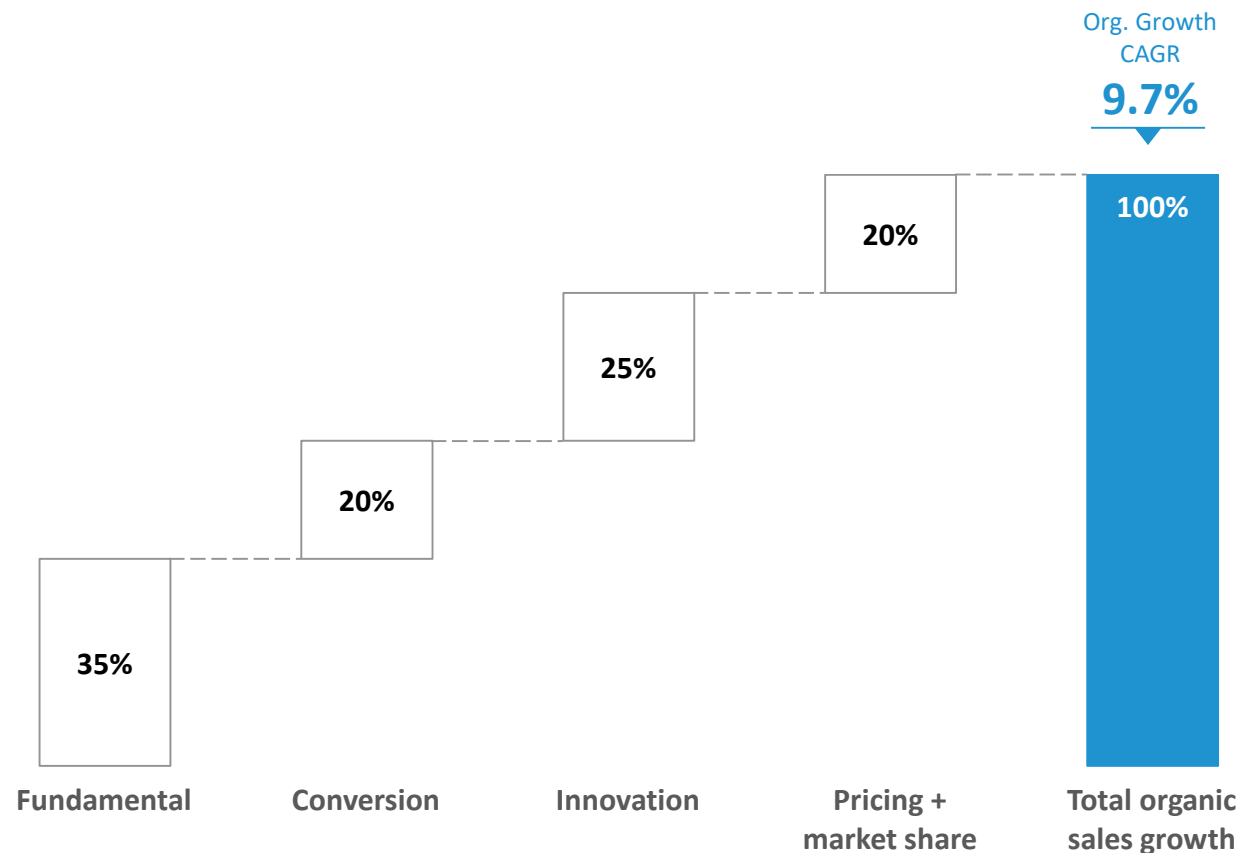
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**Growth opportunities in core and near adjacencies**



# Our business has seen robust growth performance ahead of guidance, supported by all growth drivers

## Contribution of total organic sales growth (2012/13 – 2016/17)






## Growth drivers

- ▶ Fundamental (market) growth accounted for roughly 1/3 of total growth
- ▶ Innovation driven by:
  - ▶ Up-selling to new concept generations (superior functionality and performance)
  - ▶ New and more uses of cultures and enzymes (e.g. Bioprotection)
- ▶ Market share gains are not a primary target
- ▶ Pricing performance is heavily impacted by currencies with an adjusted EUR growth CAGR of 8.2% for the 2012/13 – 2016/17



# Evolution, not revolution

	 <b>FOOD CULTURES &amp; ENZYMES</b> <hr/> <b>Leverage the full potential of Food Cultures &amp; Enzymes</b>	 <b>HEALTH &amp; NUTRITION</b> <hr/> <b>Develop the microbial platform in Health &amp; Nutrition</b>	 <b>NATURAL COLORS</b> <hr/> <b>Create further value in Natural Colors</b>
<b>Drive penetration of new innovation</b>	<ul style="list-style-type: none"> <li>▶ Continue to prioritize core dairy business</li> <li>▶ Develop adjuncts and adjacencies</li> <li>▶ Drive Bioprotection lighthouse to EUR 200m by 2025</li> </ul>	<ul style="list-style-type: none"> <li>▶ Drive new products for Human Health (incl. Microbiome) and Animal Health</li> <li>▶ Invest in Plant Health platform to unlock potential of EUR 100m by 2025</li> </ul>	<ul style="list-style-type: none"> <li>▶ Expand FruitMax® range of coloring foodstuff</li> </ul>
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<b>Generate fuel for growth</b>	<ul style="list-style-type: none"> <li>▶ Drive scalability in supply chain</li> <li>▶ Digitalize core processes</li> </ul>	<ul style="list-style-type: none"> <li>▶ Reinvest in future growth</li> </ul>	<ul style="list-style-type: none"> <li>▶ Continue drive to restore profitability</li> </ul>

# We have a focused commercial agenda and a technology that is highly relevant for customers in order to address market needs

FC&E focuses on three market agendas...

... and help our customers solve important consumer dilemmas

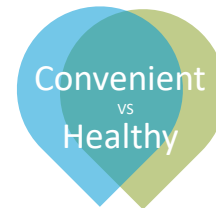
**1** Drive improved **freshness and safety of food products** and counter food waste

**2** Help food industry players meet **consumer demand for tasty, healthy, nutritious, and affordable food** with clean labels

**3** **Enable continued DVS penetration** (bulk conversion) by delivering convenience, yield benefits, consistency, and value added services



How can we **make healthy products with rich flavors?**



How can we **bridge the gap between convenient and 'good for me'?**



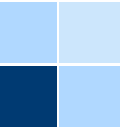
How can we **make fresh foods and 'ready-to' meal solutions safer and help consumers trust them?**



How can we **bring more umami to foods in a safe way?**

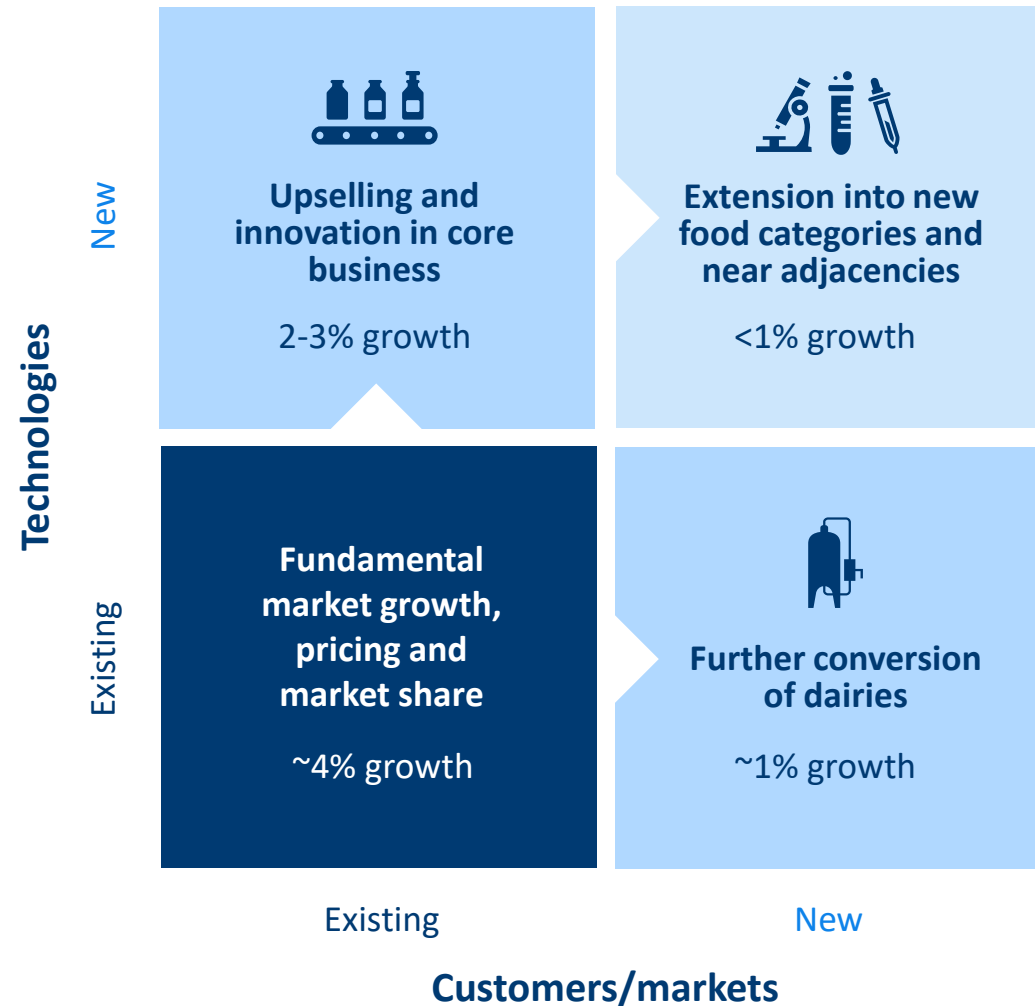


How can we **help make authentic foods safe, and standardized food more relatable?**



# We retain our long term growth guidance with majority of growth coming from core customers and markets

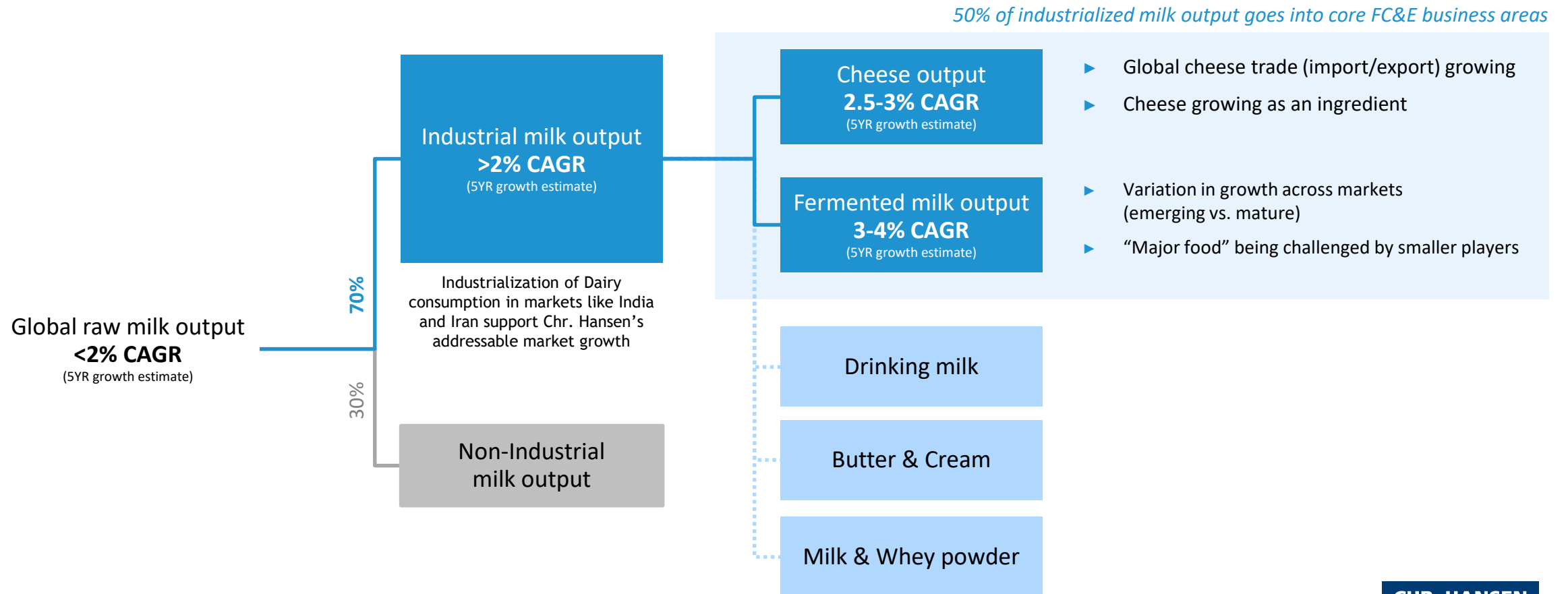
  
Organic growth  
divisional target  
7-8 %





# The fundamental market growth outlook is robust

Market growth in the segments served by Chr. Hansen will outgrow the global raw milk output

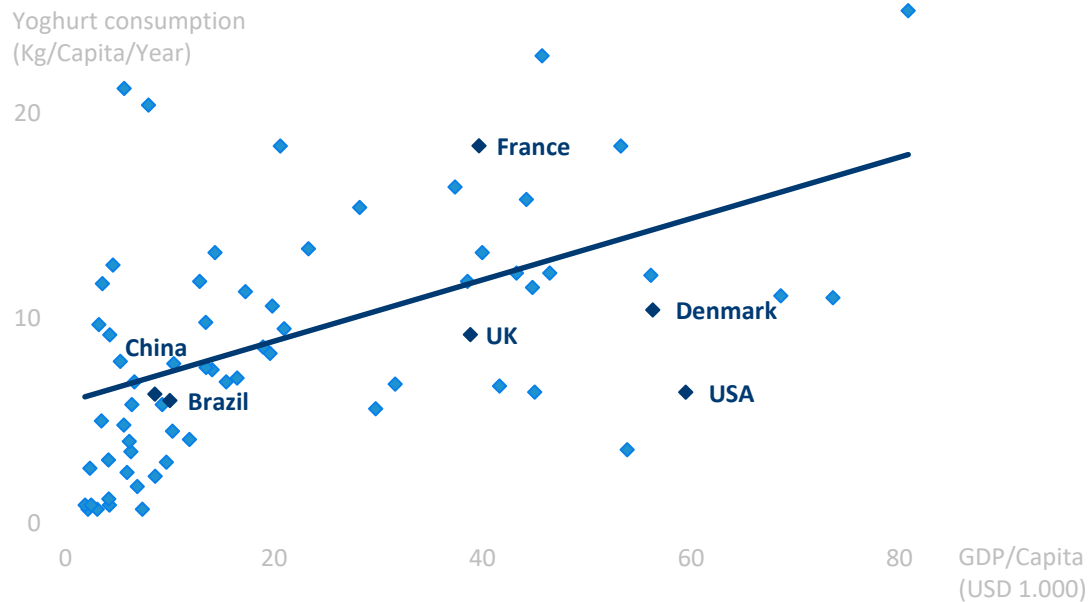






# Growing middle class drives higher consumption of dairy products

**Yoghurt consumption vs. GDP/Capita**  
2017



## Drivers of growth

*Low consumption per capita*

*High consumption per capita*

<p><b>Affordability and availability enablers (e.g. ambient); nutritional potential of milk</b></p>	<p><b>Convenience, differentiated concepts and new occasions (building on 'real foods')</b></p>
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**Cheese consumption vs. GDP/Capita**  
2017



## Drivers of growth

*Low consumption per capita*

*High consumption per capita*

<p><b>Affordability, infrastructure and cheese functionality &amp; taste</b></p>	<p><b>Category reinvention and differentiation (building on 'real foods'); cheese functionality</b></p>
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# Maintaining and growing our core business will require focus on core disciplines and continued conversion

Stay sharp on **core disciplines and core offerings** related to acidification and coagulation

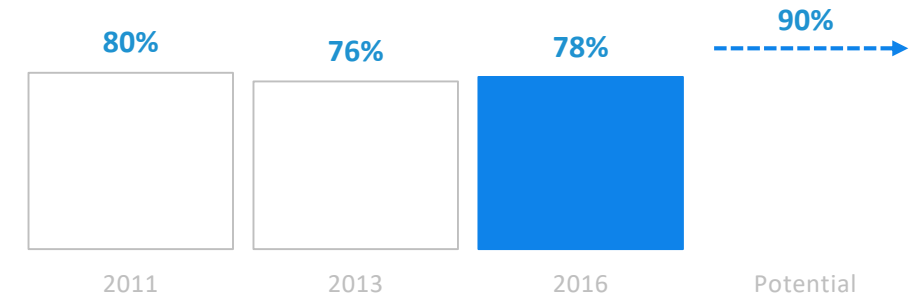
Deliver productivity and consistency

Improve customer perception of **value for money by adding new services** and making it easier to do business with Chr. Hansen

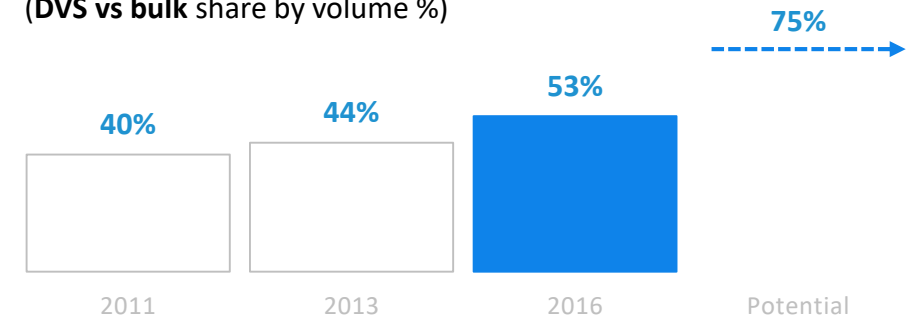
Drive the DVS conversion and harvest value

Continue to serve customers broadly with strong local presence and regional/global support base

**Fermented milk DVS<sup>®</sup> penetration**  
(DVS and bulk starter market volume %)



**Cheese DVS<sup>®</sup> penetration**  
(DVS vs bulk share by volume %)





# Upselling novel solutions and increasing wallet size with existing customers

Rejuvenate **product offerings** and up-sell customers to newer, higher priced solutions

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Develop **new adjunct uses** of cultures and enzymes

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Selling **more solutions to each existing customer** on average

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Identify paths to outpace volume growth in mature fermented milk markets (France, Russia and US)

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 <p>Health by Probiotics</p>	 <p>Bio-Protection by BioSafe<sup>®</sup> and FreshQ<sup>®</sup></p>	 <p>Sugar reduction by NOLA<sup>®</sup> Fit</p>	 <p>Ripening aids by DVS<sup>®</sup></p>
 <p>Improved functionality and differentiation by DVS<sup>®</sup> Cultures</p>		 <p>Cost efficiency by innovative DVS<sup>®</sup> Cultures</p>	



# Leveraging core technology to address major consumer trends and build adjacent business opportunities

## Adjacent market segments to be built with existing technologies



**Fermented Beverages**

### Non-alcoholic beer


- ▶ Demand for low/no alcohol (occasions and geographies)
- ▶ DVS®-type technology for breweries with strong IP
- ▶ Building on competencies, processes, and people that already serve the Wine segment



**Dairy alternatives**

### Plant-based dairy alternatives

- ▶ Small but growing niche in the yoghurts space
- ▶ Address texture and flavour profiles through core fermentation solutions
- ▶ Support incumbents and new entrants



**Meat adjacencies**

### Cooked Sausages, bacon, and Salmon

- ▶ Demand for fresh, clean and safe meat products
- ▶ Fermentation solutions (acidification and Bioprotection)
- ▶ Expanding the remit of the existing Meat team



**Processed food**

### Ready to eat salads

- ▶ Demand for fresh, clean and safe ready-to-eat formats
- ▶ Surface fermentation (Bioprotection)
- ▶ Supported by technologists and value chain that also support Meat adjacencies



# Bioprotection today and tomorrow – a EUR 200m business by 2025

Bioprotection has made strong progression since 2013, and will continue to create long-term revenue optionality

# 6%

of Food Cultures & Enzymes revenue in 2016/17



Fresh Dairy



Cheese



Fermented Meat



Animal products  
(meat adjacencies/fish)



Vegetable products

Traditionally Fermented Food Products

Non Traditionally Fermented Food Products

### Food waste

Shelf Life Extension targeting yeasts/mould/LAB



### Food Safety

Additional protection against gram-positive food pathogens (Listeria, Clostridium)



## Key Messages

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**Strong competitive position in the Dairy market**

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**Technology base relevant and 'on trend'**

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**Growth opportunities in core and near adjacencies**



♥ HEALTH & NUTRITION

# H&N strategy

**Develop the microbial platform  
in Health & Nutrition**

Christian Barker



♥ HEALTH & NUTRITION

## Key Messages

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**Microbial solutions have extraordinary potential to improve health and productivity for humans and agriculture**

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**Chr. Hansen is exceptionally positioned to capture this potential**

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**Health & Nutrition pursues three different strategies across three different areas with attractive growth fundamentals**





# H&N has a diverse portfolio with strong growth prospects

Three diverse business areas leveraging the same microbial and R&D platform



## Human Health (including Microbiome)

- ▶ Dietary supplements
- ▶ Infant formula
- ▶ New microbiome products



## Animal Health

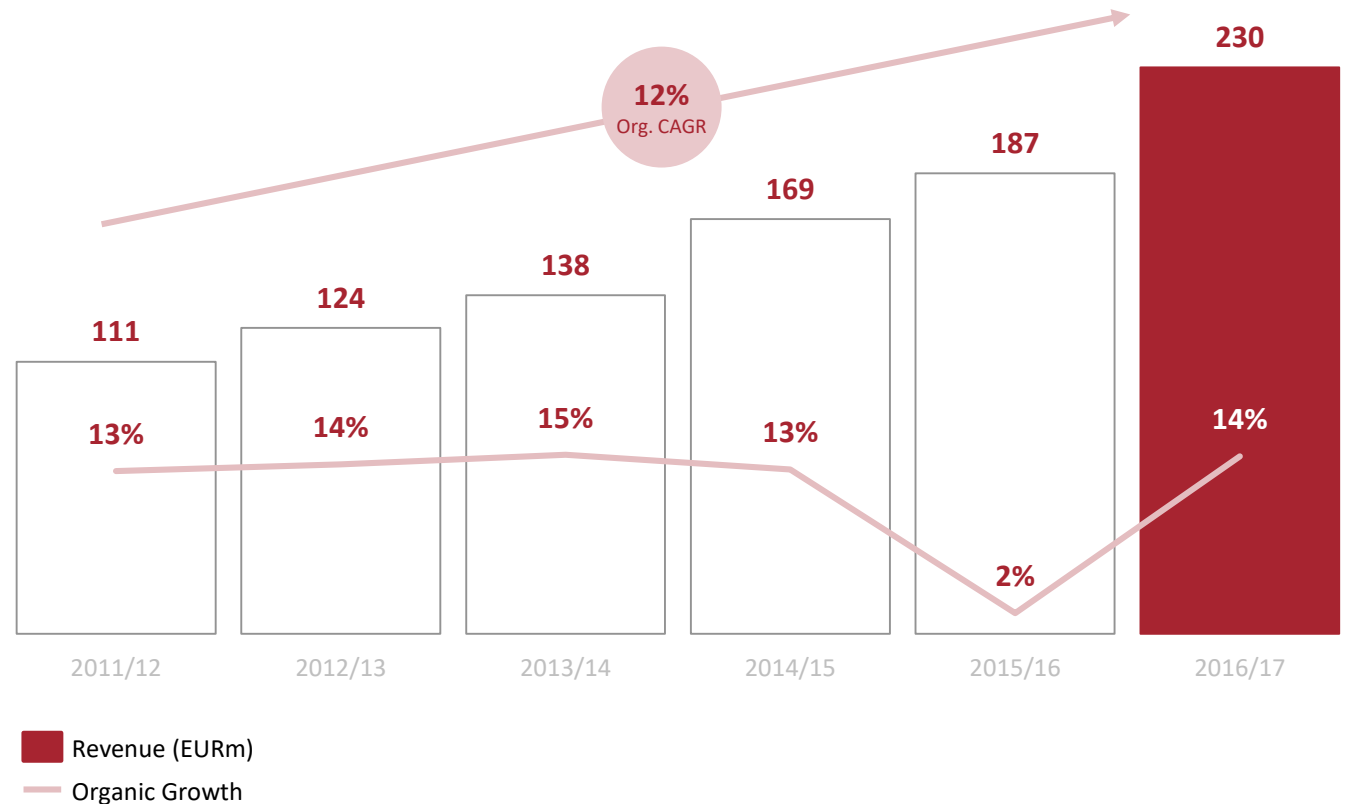
- ▶ Cattle
- ▶ Swine
- ▶ Poultry
- ▶ Silage



## Plant Health

- ▶ Sugar cane
- ▶ Soy bean
- ▶ Corn

Strong historical growth, with some volatility in annual growth rates





# Evolution, not revolution



## FOOD CULTURES & ENZYMES

Leverage the full potential of Food Cultures & Enzymes



## HEALTH & NUTRITION

Develop the microbial platform in Health & Nutrition



## NATURAL COLORS

Create further value in Natural Colors

### Drive penetration of new innovation

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### Generate fuel for growth

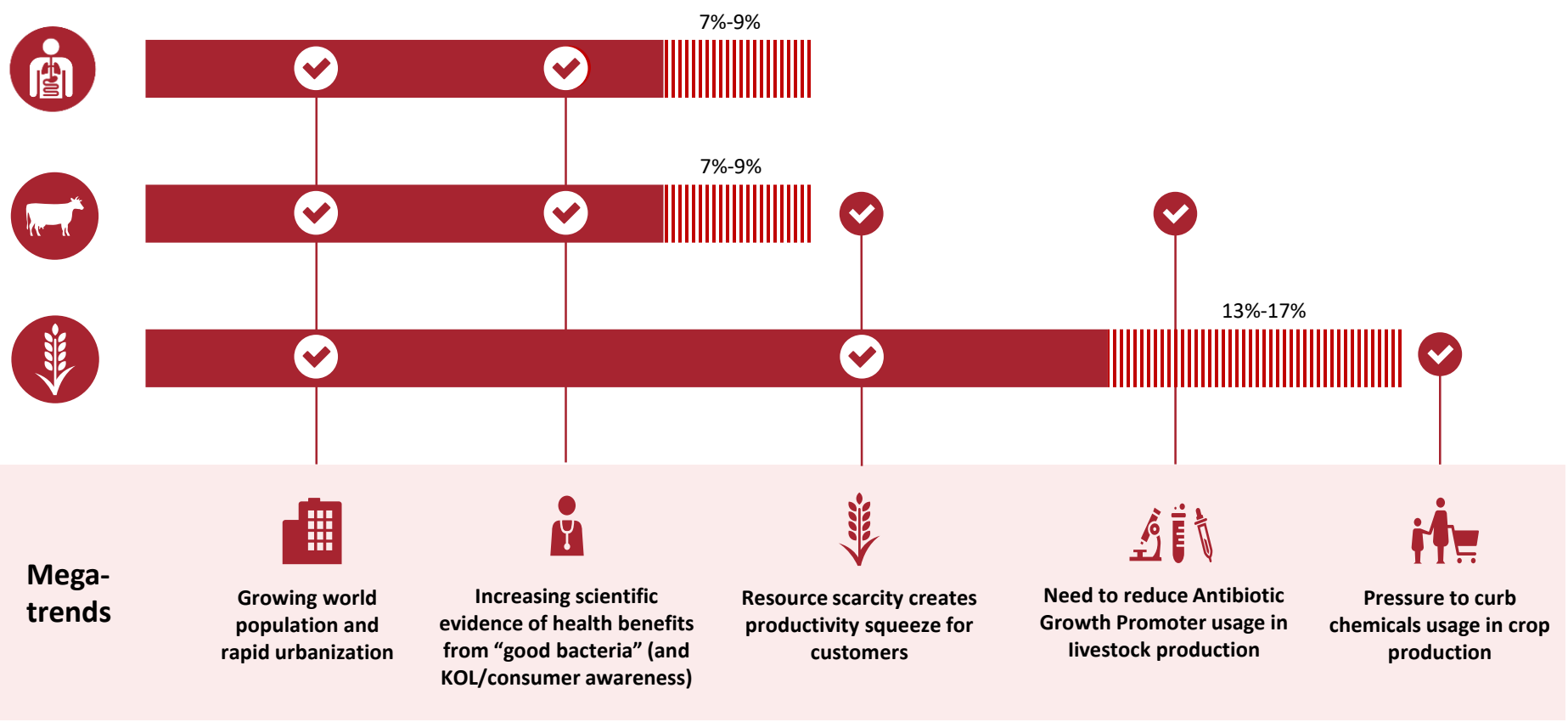
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- ▶ Reinvest in future growth

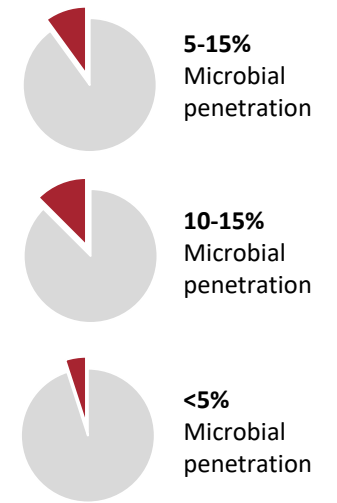
- ▶ Continue drive to restore profitability

# We participate in high growth markets with headroom to increase penetration

## Attractive market growth driven by megatrends



## Opportunities to increase penetration

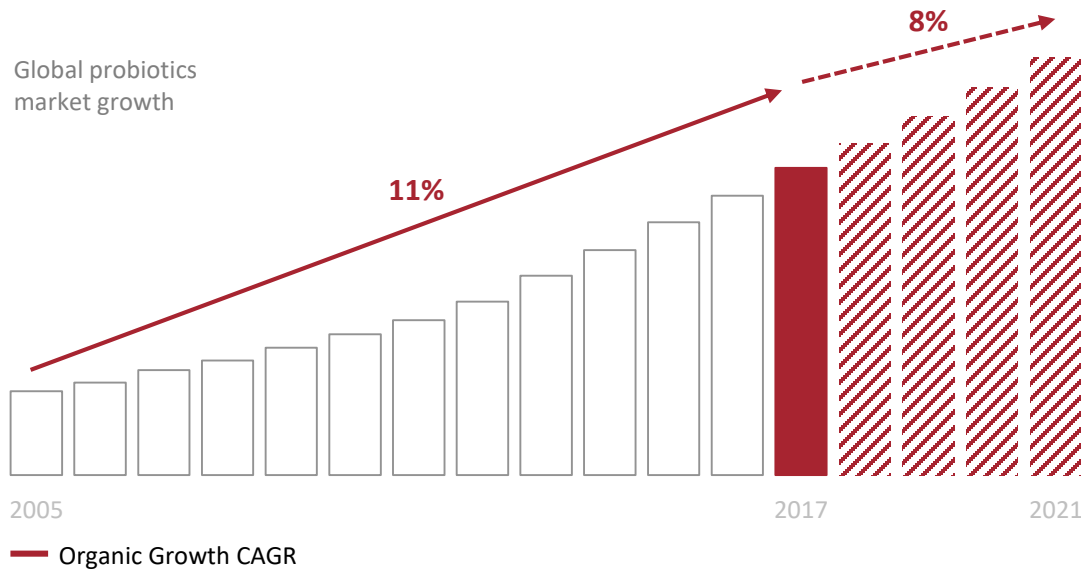




# Probiotics remains an attractive market with strong fundamentals

## Positive fundamentals in probiotic dietary supplements

- ▶ The **market for probiotics** keeps outgrowing adjacent categories
- ▶ CAGR expectations 2002-2021
  - ▶ OTC: 4,4%
  - ▶ Vitamins: 4,9%
  - ▶ Dietary Supplements: 6,5%



## Changing market dynamics

### Key market dynamics

Growth increasingly driven by emerging markets

KOLs<sup>1</sup>, medical professionals consumers increasingly aware of microbiome and probiotics

Rapid online channel migration

Proliferation of undocumented products confusing consumers in some markets

### Our position

▶ Strong presence and growth in emerging countries

▶ Chr. Hansen offers the best documented strains in the highest quality

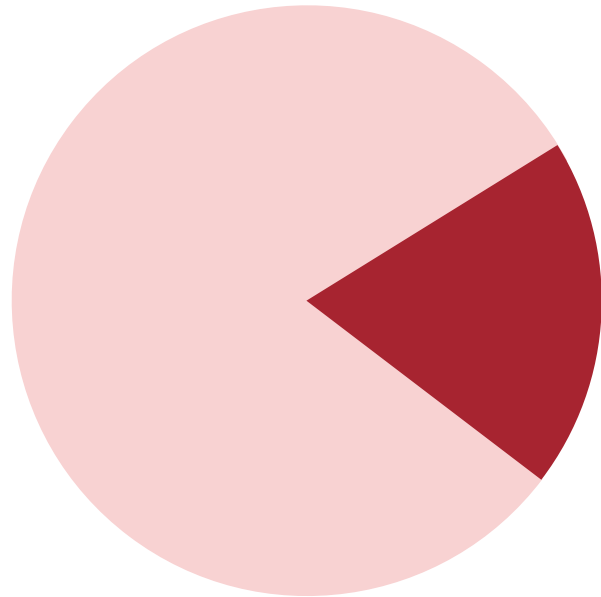
▶ Current customers adapting to new channels at varying speed and success

▶ Helping our customers differentiate and educate KOLs<sup>1</sup>



# We are addressing current challenges in the U.S.

## Challenge in North America for our Human Health business...



H&N Revenue  
 North American Dietary Revenue

## ... is primarily driven by excess inventory

Excess inventory in 2018 at key NA accounts

Category slowdown from double digit to high single digit

Many new low end non-documented products being launched online

Current brand winners in a transition phase to online channels

## Our actions

Expected to be back on track in the coming year as customers adapt to new market dynamics

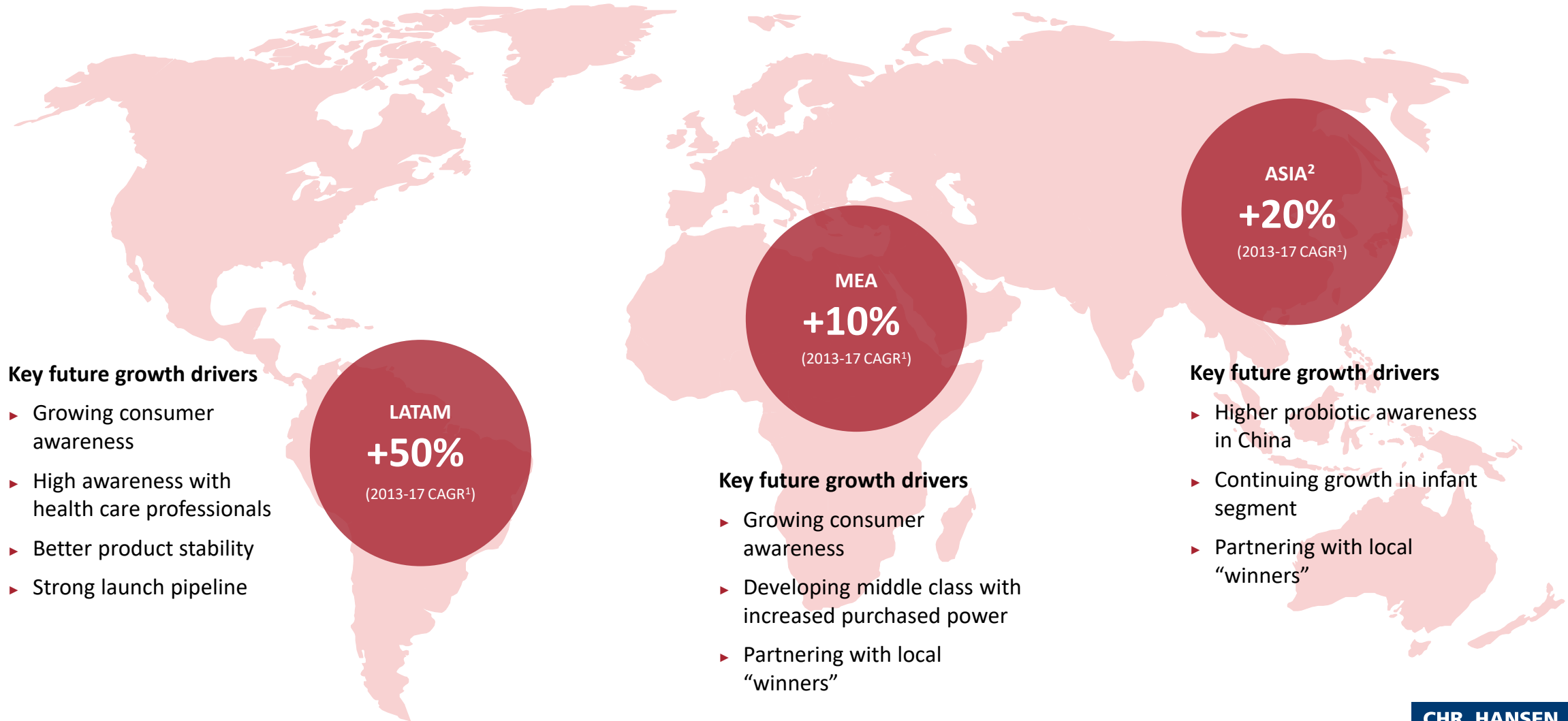
Launching with 3 new brands/players in 2018

Helping our customers to better educate KOL<sup>1</sup> and HCP<sup>2</sup>, while evaluating if we need new offerings in our portfolio

Current partners have strengthened their presence in online channels becoming top selling products



# We will continue to deliver high growth in emerging markets

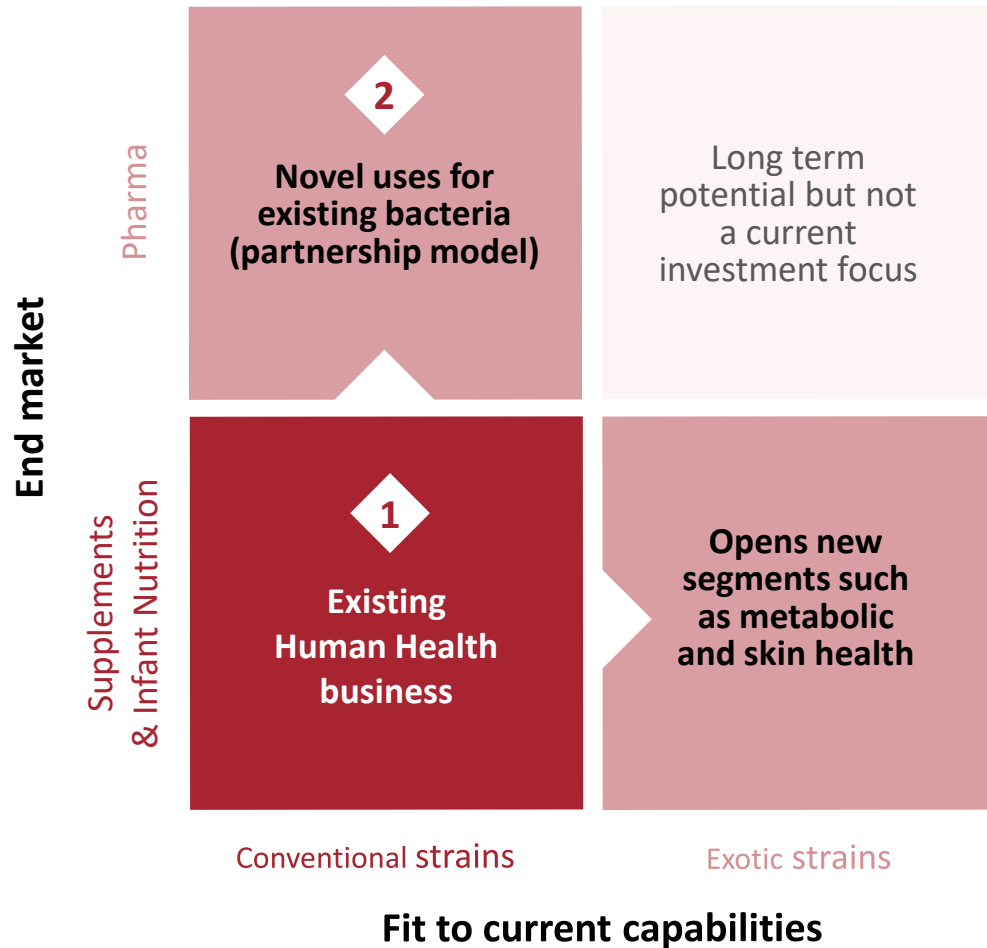


<sup>1</sup> Chr. Hansen growth compounded on organic growth basis

<sup>2</sup> Excluding Japan, Korea, Australia, and New Zealand



# New innovation, fueled by Microbiome concepts, will drive medium and long-term growth



## 1 Microbiome is creating new opportunities within conventional strains and existing end markets

**Infants in hospitals**      Reduce risk of gastrointestinal complications

**Infant:**      Support infant gut microbiome for healthy development

**Adult:**      Promote intestinal integrity

**Women:**      Rebalance a healthy vaginal microbiome

## 2 Recent partnership with Prota Therapeutics to treat peanut allergy with LGG®





# Consumers and regulators are demanding natural alternatives to antibiotics in livestock production

## Antibiotic resistance is one of main threats defined by the WHO

## Consumers started to demand Non-Antibiotic-Ever meat



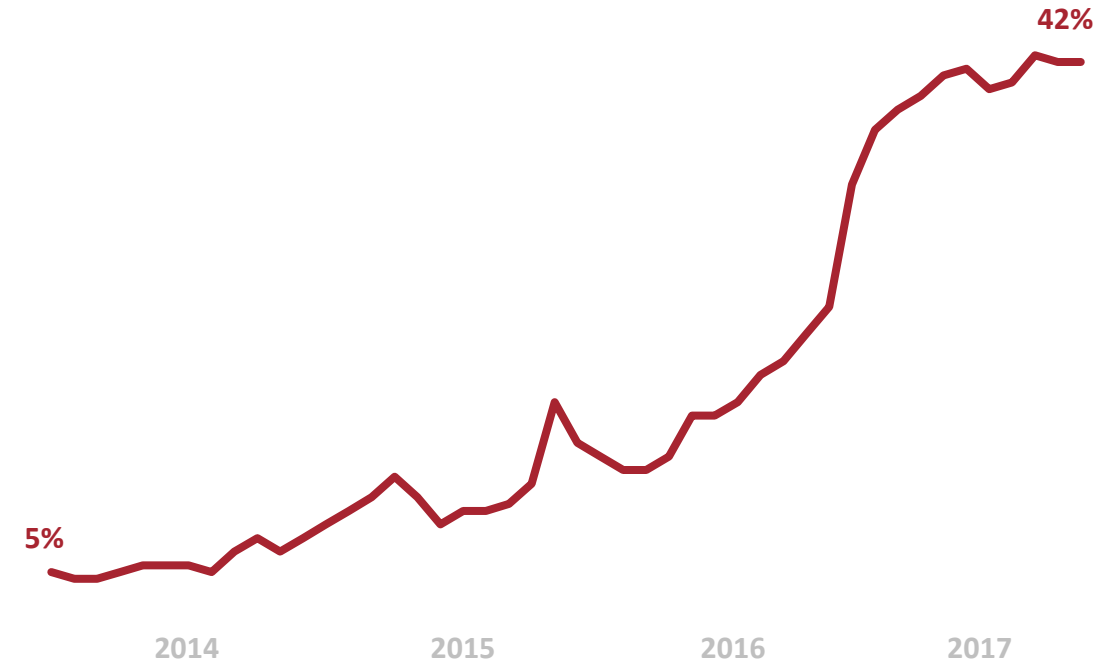
High levels of antibiotic resistance found worldwide, new data shows

News release

29 JANUARY 2018 | BANGKOK - WHO's first release of surveillance data on antibiotic resistance reveals high levels of resistance to a number of serious bacterial infections in both high- and low-income countries.

## WHO continues to highlight the role of antibiotics in livestock in the rise of antibiotic resistance

## Seasonal % of Birds fed Non-Antibiotic-Ever in the US







# Our Animal Health products are differentiated and well positioned to address changing market conditions



**BioPlus<sup>®</sup> YC**

The reference swine probiotic on the market for 30 years



**SiloSolve<sup>®</sup> FC**

Patented Silage inoculant providing unique flexibility and usability for farmers



**GalliPro<sup>®</sup> Fit**

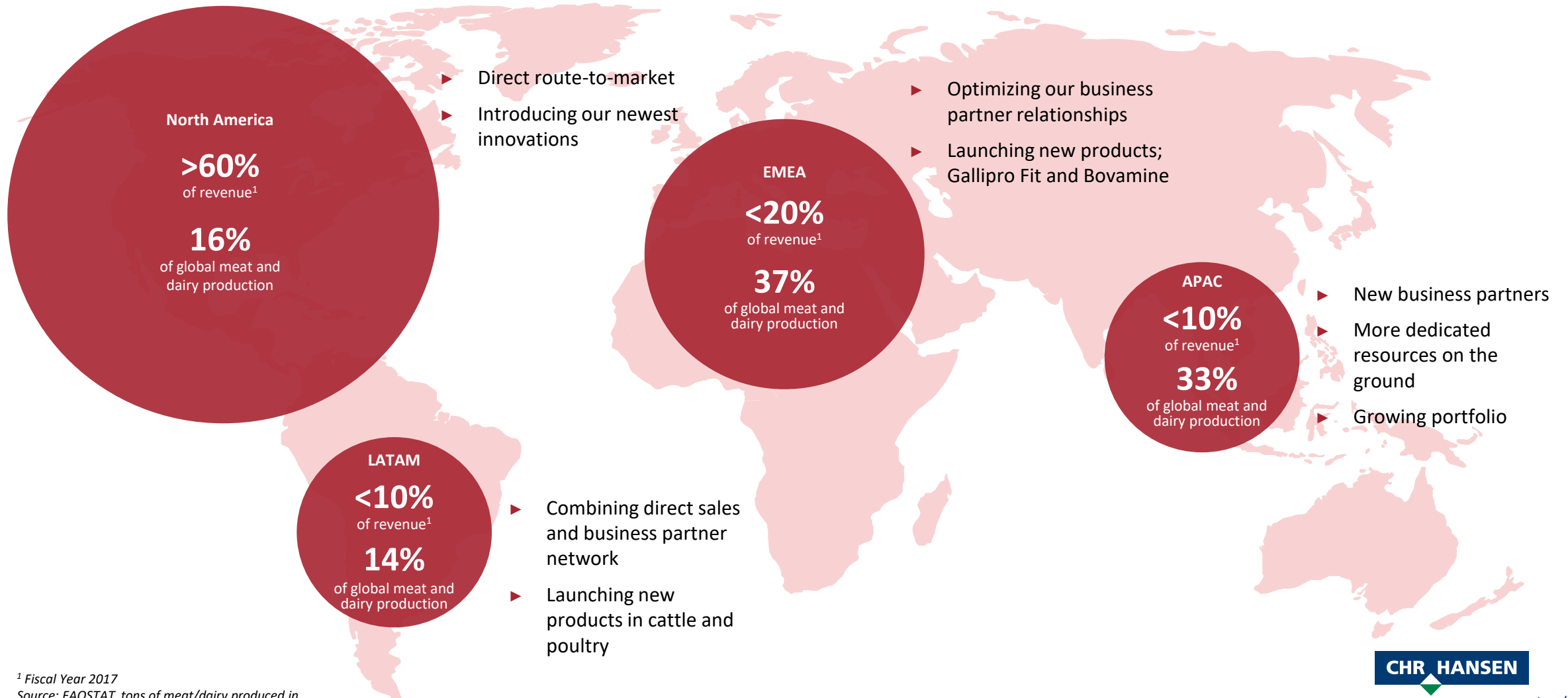
Next generation poultry probiotic with best in class pathogen inhibition

**Differentiators**

- |   |  |  |
|---|--|--|
| <ul style="list-style-type: none"> <li>▶ Product for all Swine subsegments (from piglet to growth/finisher)</li> <li>▶ Most documented dual strain product on the market</li> <li>▶ 20% reduction in pre-wean mortality</li> <li>▶ Flexible Feed Formulation concept</li> </ul> | <ul style="list-style-type: none"> <li>▶ Offers best aerobic stability in the market</li> <li>▶ Allows farmers to feed out early from bunker</li> <li>▶ Broadest range applicability across crops and humidity levels</li> </ul> | <ul style="list-style-type: none"> <li>▶ Blend of 3 unique new strains</li> <li>▶ Best in class in inhibition of pathogens to support the health of poultry and securing food safety for consumer</li> <li>▶ Superior digestibility of protein, carbs and non-starch poly-saccharides</li> </ul> |
| <ul style="list-style-type: none"> <li>▶ Launched in all major geographies</li> <li>▶ Continued opportunities to deepen market penetration</li> </ul>   | <ul style="list-style-type: none"> <li>▶ Global roll-out in progress</li> </ul>  | <ul style="list-style-type: none"> <li>▶ Recently launched in US and Australia</li> <li>▶ Global roll-out in the next 2 years</li> </ul>   |



# We are strengthening our route-to-market globally to bring our solutions to new customers



<sup>1</sup> Fiscal Year 2017  
Source: FAOSTAT, tons of meat/dairy produced in 2016 (cattle, poultry, swine)



# Established 5 years ago, Plant Health is now a promising business with focus on expanding geography and crop targets

2013

## ENTERS Plant Health

- ▶ First product (Nemix C<sup>®</sup>) registered in Brazil as an inoculant for sugarcane
- ▶ Chr. Hansen and FMC enters into global development and commercialization alliance

2016

## ALLIANCE PROGRESSION

- ▶ Nemix C<sup>®</sup> shows strong performance in field trials
- ▶ The alliance launches Capture<sup>™</sup> VGR<sup>®</sup> for corn in US
- ▶ The alliance develops a promising pipeline aimed at new markets and crops

2018

## NEW MARKET DEVELOPMENTS IN BRAZIL

- ▶ Commercial launch of two bionematicide products that protects crops from nematodes
- ▶ Furadan, the leading chemical nematicide in sugarcane in Brazil, is taken off the market
- ▶ Trials initiated in new crop types to broaden reach of products and pipeline

2025

## PRESENCE IN MAJOR GEOGRAPHIES

- ▶ Unlock annual revenue of €100m by 2025



**EUR 100m**  
by 2025



# Our recent alliance launches Quartzo and Presence have a nematocidal claim and effect



<b>Description</b>	Bacillus based product Applied in-furrow or through drip irrigation	Bacillus based product Applied as seed treatment before planting
<b>Applicable crops</b>	Sugarcane, F&V, other	Soybean, Corn, Cotton, beans, wheat
<b>Registration</b>	Bionematicide	Bionematicide
<b>Benefits and yields</b>	Root colonization Protection against nematodes and soil diseases Increase of plant robustness and yield	Root colonization Protection against nematodes and soil diseases Increase of plant robustness and yield



**Competing technologies**

- Chemicals
- GMO
- Biological

- Chemicals
- GMO
- Biological

# Our products have shown very good results and we are working to add more crops

"It is incredible to see the effect. It's normal to see treatments differentiation during the first month, but here we have the visual differentiation for the entire cycle."

Brazilian soybean farmer



PRESENCE

Untreated



"Very consistent and positive yield effect"

Large Brazilian sugarcane farmer




NEMIXE

Untreated

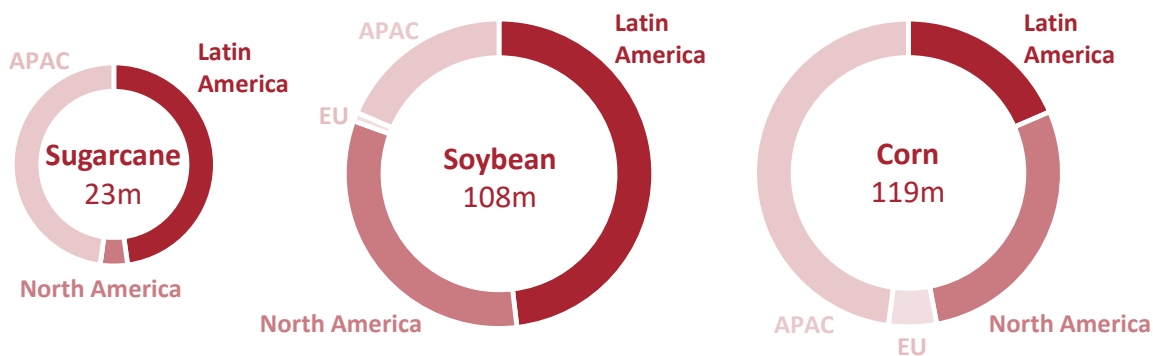


# With this pipeline our business aims to unlock a potential of EUR 100m revenue by 2025

## Big and growing market

-  5% penetration of microbial products in the industry
-  >10 % expected growth of the bio-pesticide industry towards 2021
-  2.5 % expected growth of the Crop protection industry towards 2021

## Hectares harvested in existing vs. potential markets, 2015



## Ambitions of Plant Health

- ▶ Today: On market primarily in South America (Brazil)
- ▶ 2019/20: Expansion in North America
- ▶ 2024/25: Presence in all major geographies
- ▶ *Ramping up investments in capacity, discovery, and tech support*



**EUR 100m**  
Unlocked potential by 2025

♥ HEALTH & NUTRITION

## Key Messages

---

**Microbial solutions have extraordinary potential to improve health and productivity for humans and agriculture**

---

**Chr. Hansen is exceptionally positioned to capture this potential**

---

**Health & Nutrition pursues three different strategies across three different areas with attractive growth fundamentals**



RESEARCH & DEVELOPMENT

# The microbial platform

## R&D as a competitive advantage

Thomas Schäfer





RESEARCH & DEVELOPMENT

# Key Messages

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**Our microbial solutions platform is unique**

---

**Product launches over the next 5 years will support growth**

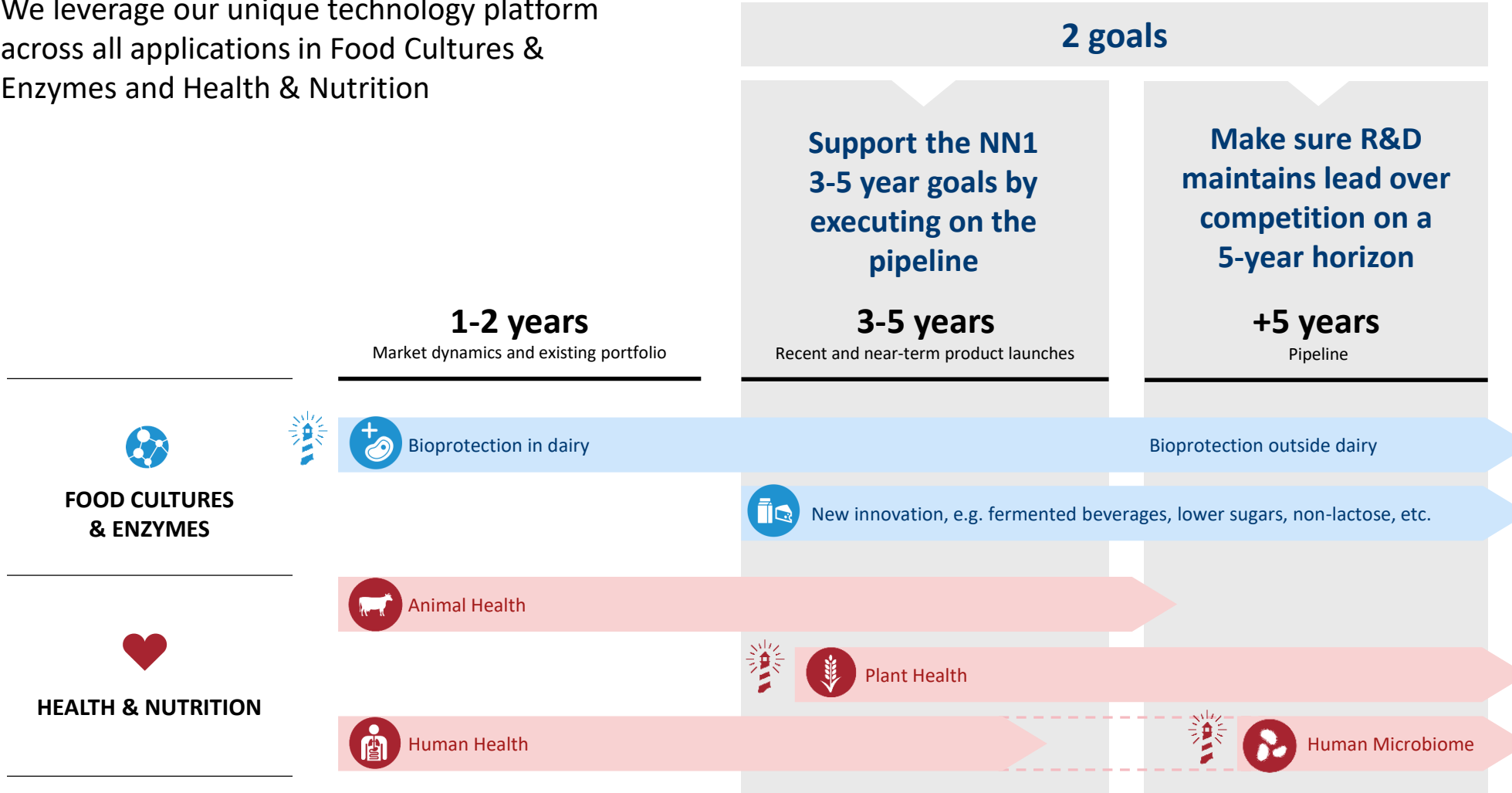
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**We will invest to continue to stay ahead in key competence areas**



# R&D supports 80% of our current business

We leverage our unique technology platform across all applications in Food Cultures & Enzymes and Health & Nutrition



# What is the difference between microbes and enzymes?

Our success is built on world-class expertise in microbes

## Microbes

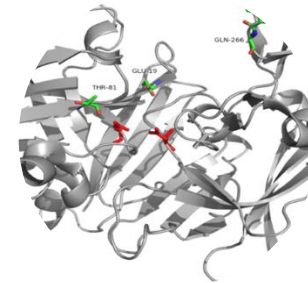


### **Microbes are living organisms**

for example bacteria and fungi.  
Industrially produced via fermentation

At Chr. Hansen we focus on bacteria.  
Living bacteria are the building blocks of our cultures which are used in almost all our businesses. They create many different benefits for dairies, humans, animals and plants

## Enzymes



### **Enzymes are proteins**

often industrially produced from microbes.  
Enzymes catalyze specific biochemical reactions

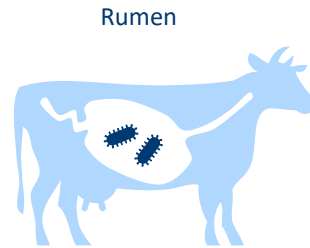
At Chr. Hansen we use enzymes to optimize cheese coagulation and ripening, so it helps cheese manufacturers to get right texture and flavor of the cheese

# Beneficial co-existence with microbes form the basis of our business

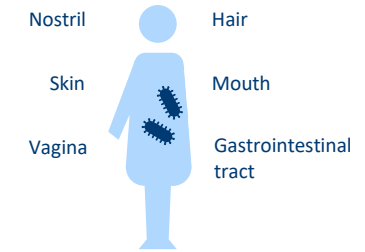
Microbes are essential for all higher life on earth



**Legumes house Rhizobia to fix N<sub>2</sub>, microbes help with P-uptake**



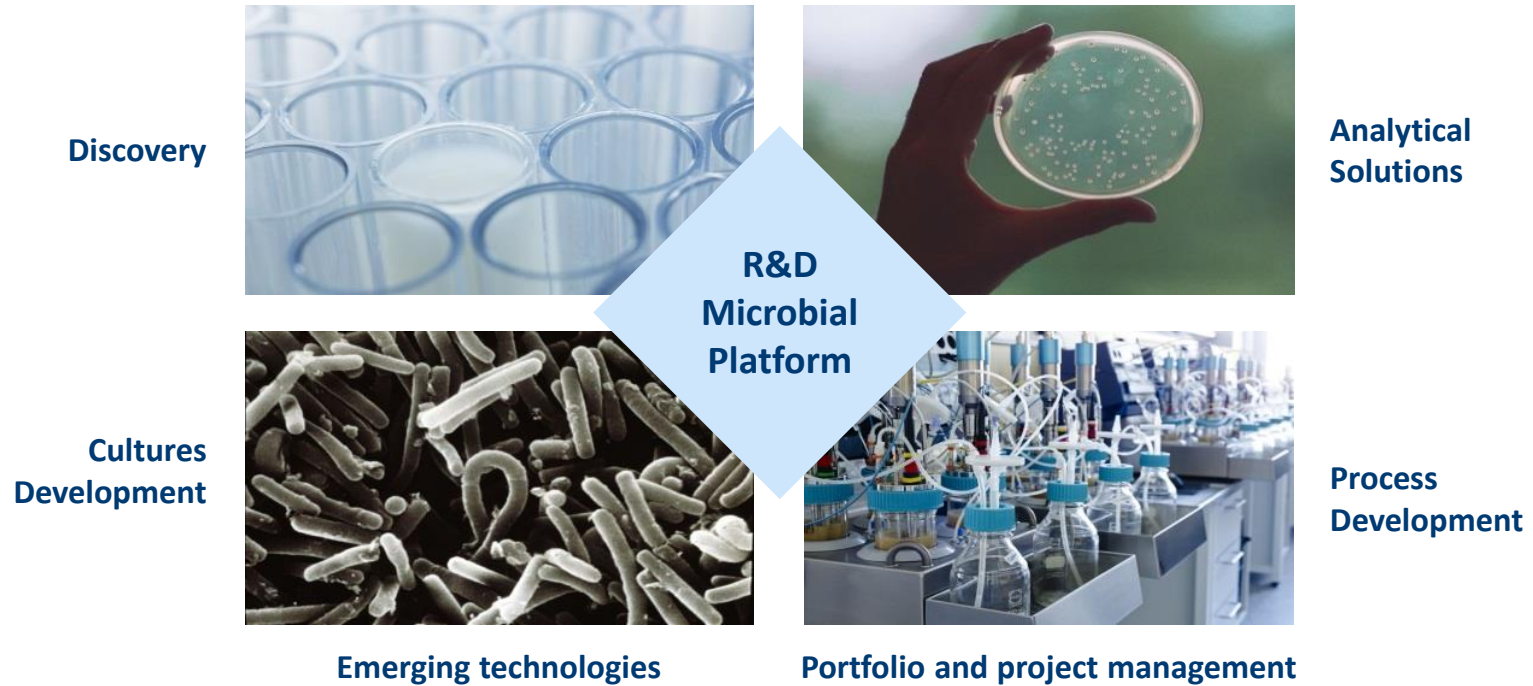
**Termites, ruminants digest cellulose with help of microbes**



**Human microbiomes protect the skin, assist digestion, and ensures well-being**



# R&D is a microbial powerhouse ...



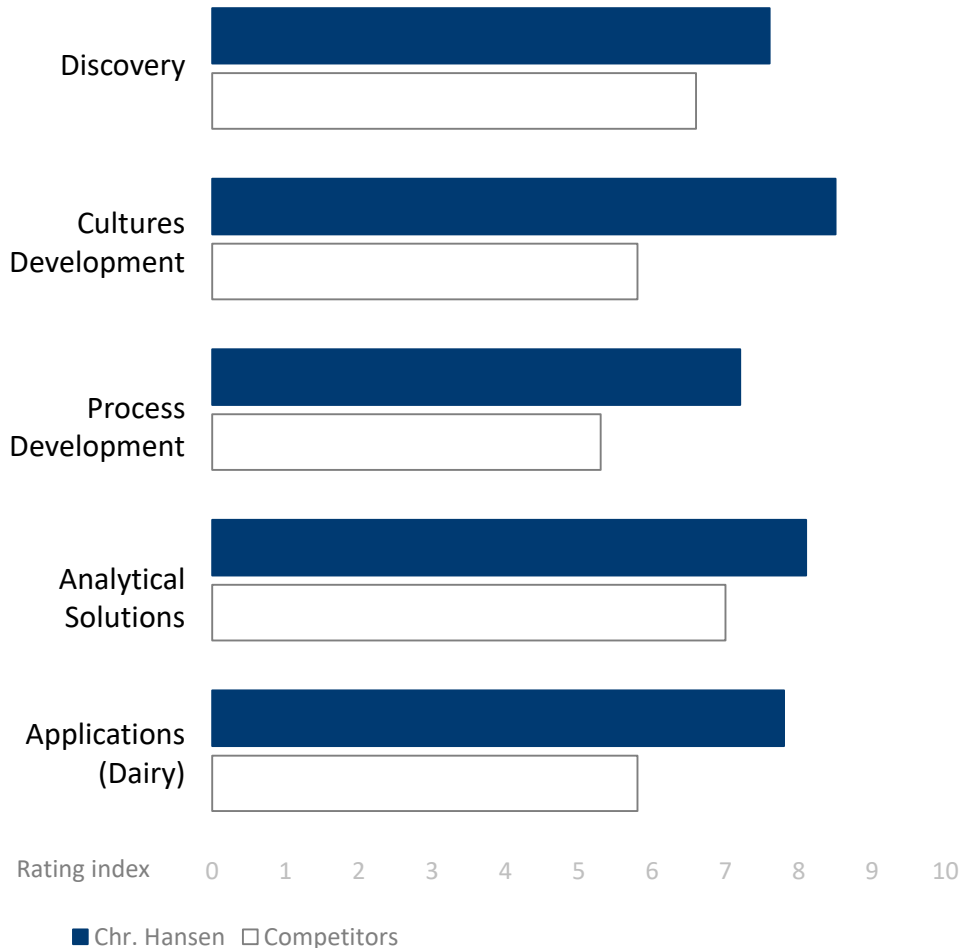
**Production**



**Application Development**

# ... with a world leading technology base that we continuously improve ...

## We are ahead of competition ...



## ... and we are committed to invest to keep our leading position

+ Further boost from digitalization

<ul style="list-style-type: none"> <li>✓ Bioinformatics</li> <li>✓ Mode-of-action</li> </ul>	<ul style="list-style-type: none"> <li>▶ Builds solid understanding to develop better products</li> </ul>
<ul style="list-style-type: none"> <li>✓ Automated assays to advance compounding across all applications</li> </ul>	<ul style="list-style-type: none"> <li>▶ Delivers unique products</li> </ul>
<ul style="list-style-type: none"> <li>✓ Downscaled, predictive processes</li> </ul>	<ul style="list-style-type: none"> <li>▶ Improves efficiency, drives scalability and cost</li> <li>▶ Improves scale-up from ml to m3</li> </ul>
<ul style="list-style-type: none"> <li>✓ Advanced assays and technologies</li> </ul>	<ul style="list-style-type: none"> <li>▶ Scalable, high quality QC</li> <li>▶ Efficient performance selection for product development</li> </ul>
<ul style="list-style-type: none"> <li>✓ Downscaled, predictive application trials</li> </ul>	<ul style="list-style-type: none"> <li>▶ Customer proximity and fast turnaround of ideas to solutions</li> </ul>

# ... via strong partnerships to accelerate our advancements



## Dairy

- University of Wisconsin, Madison
- Cornell University
- Wageningen University & Research Center
- University of Copenhagen



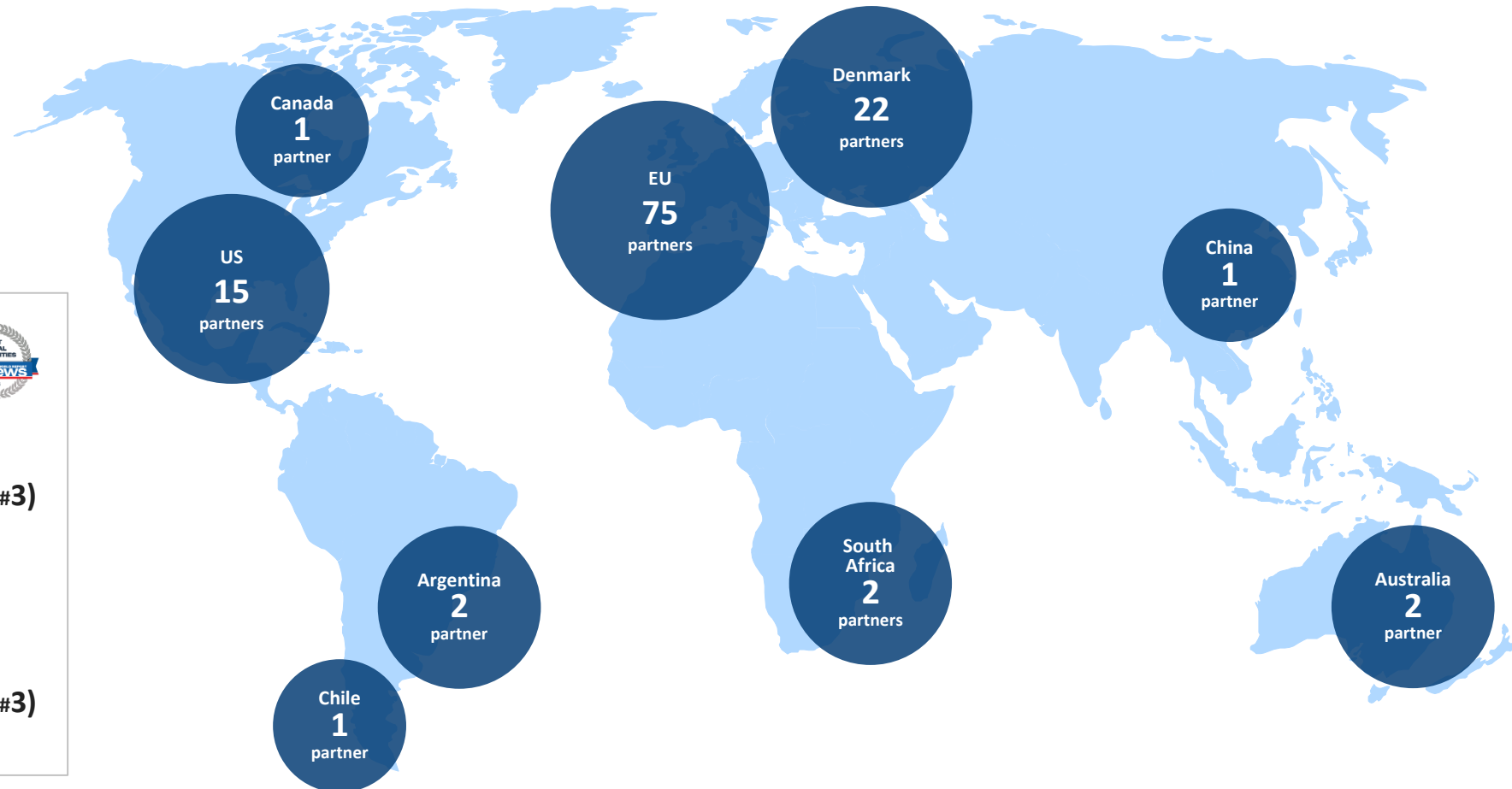
## Plant

- University of California, Davis (#1)
- Cornell University (#2)
- Wageningen University & Research Center (#3)



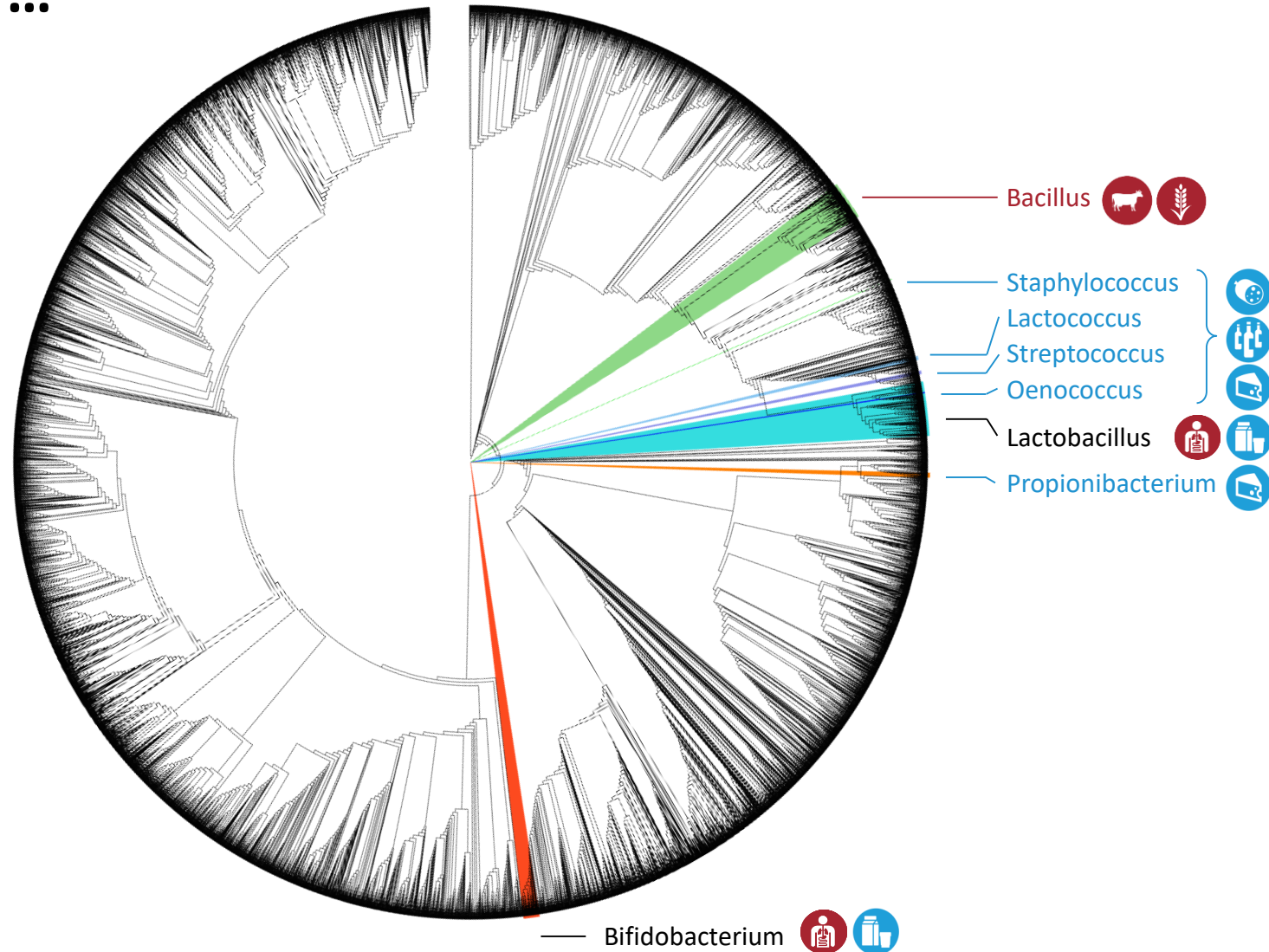
## Animal Health

- University of California, Davis (#1)
- Wageningen University & Research Center (#3)
- Ghent University (#5)



# We see an unlimited potential of microbial diversity across all our businesses ...

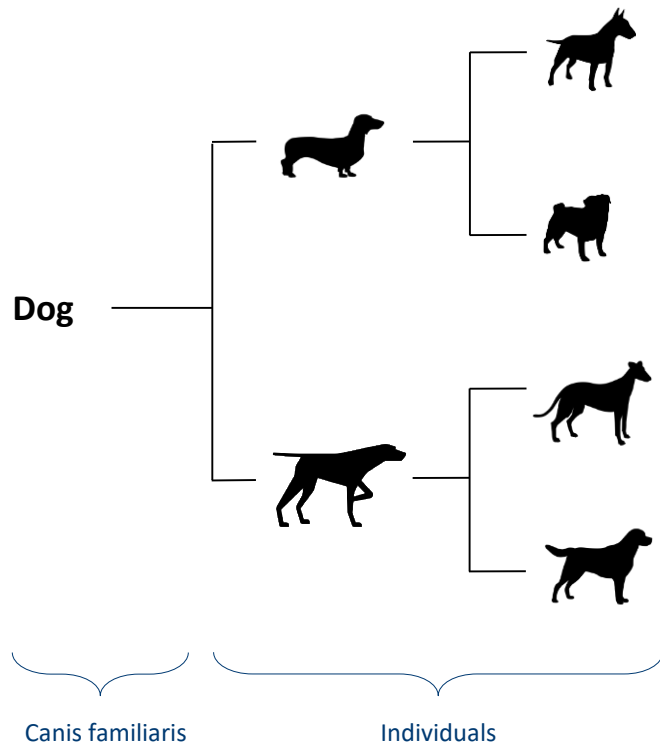
Approximately ~13.000 bacterial species are described today



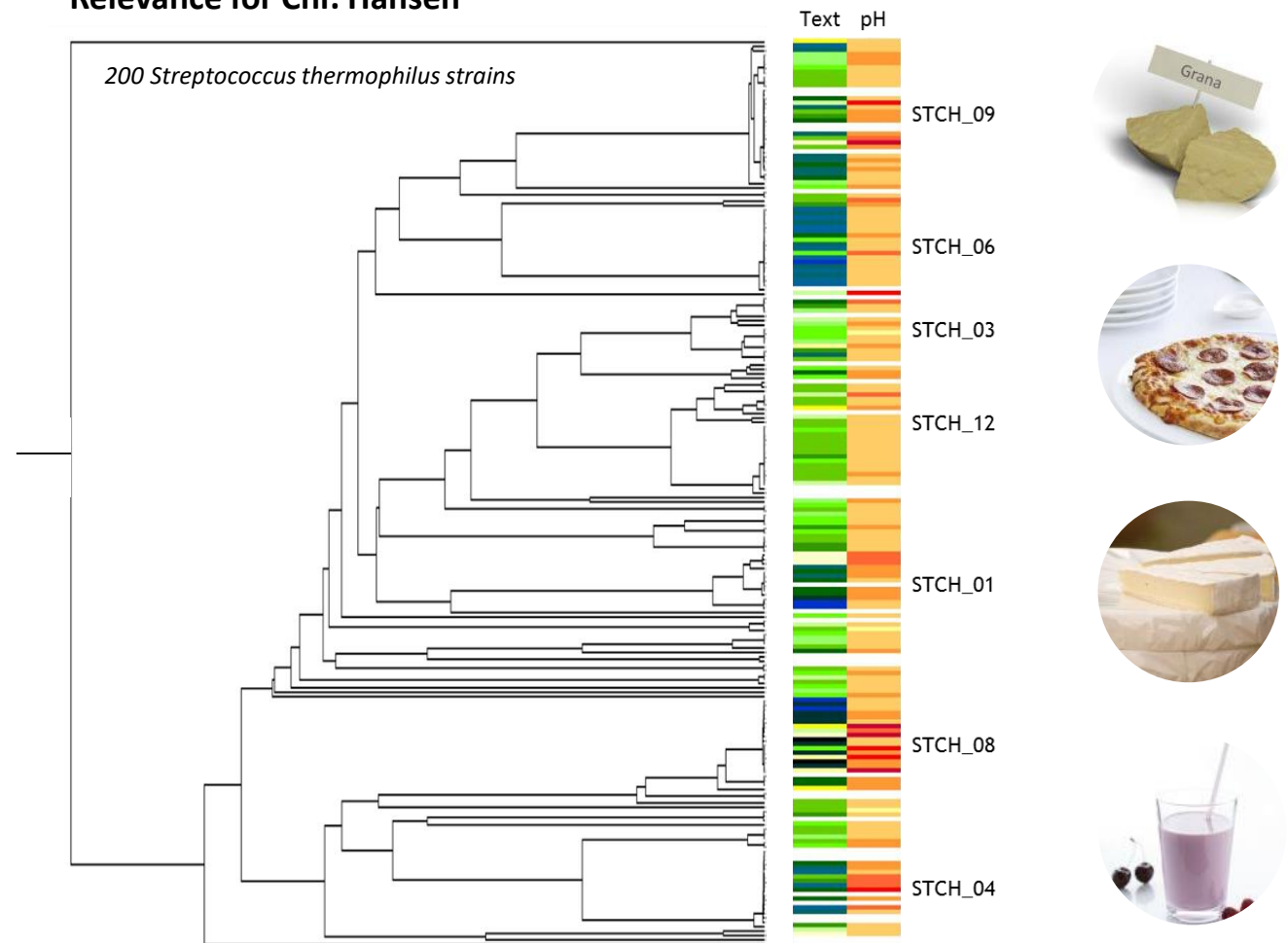


# ... especially, when we dig into “specific strains” rather than species

- ▶ Different individuals/strains have different properties, but belong to the same family/species
- ▶ Some individuals/strains are better suited to specific jobs than others



## Relevance for Chr. Hansen



Chr. Hansen owns a unique Culture Collection of approximately 30.000 isolates

# Product launches over the next 5 years will support growth

## Business unit

## R&D driving step changes in innovation



FOOD CULTURES &  
ENZYMES



New platforms for dairy

Grow the Bioprotection lighthouse: EUR 200m in 2025

Build basis for future growth by investments in adjacencies



HEALTH &  
NUTRITION



Grow and strengthen the foundation for Animal & Human Health

Grow the Plant Health lighthouse

Succeed with the Human Microbiome lighthouse



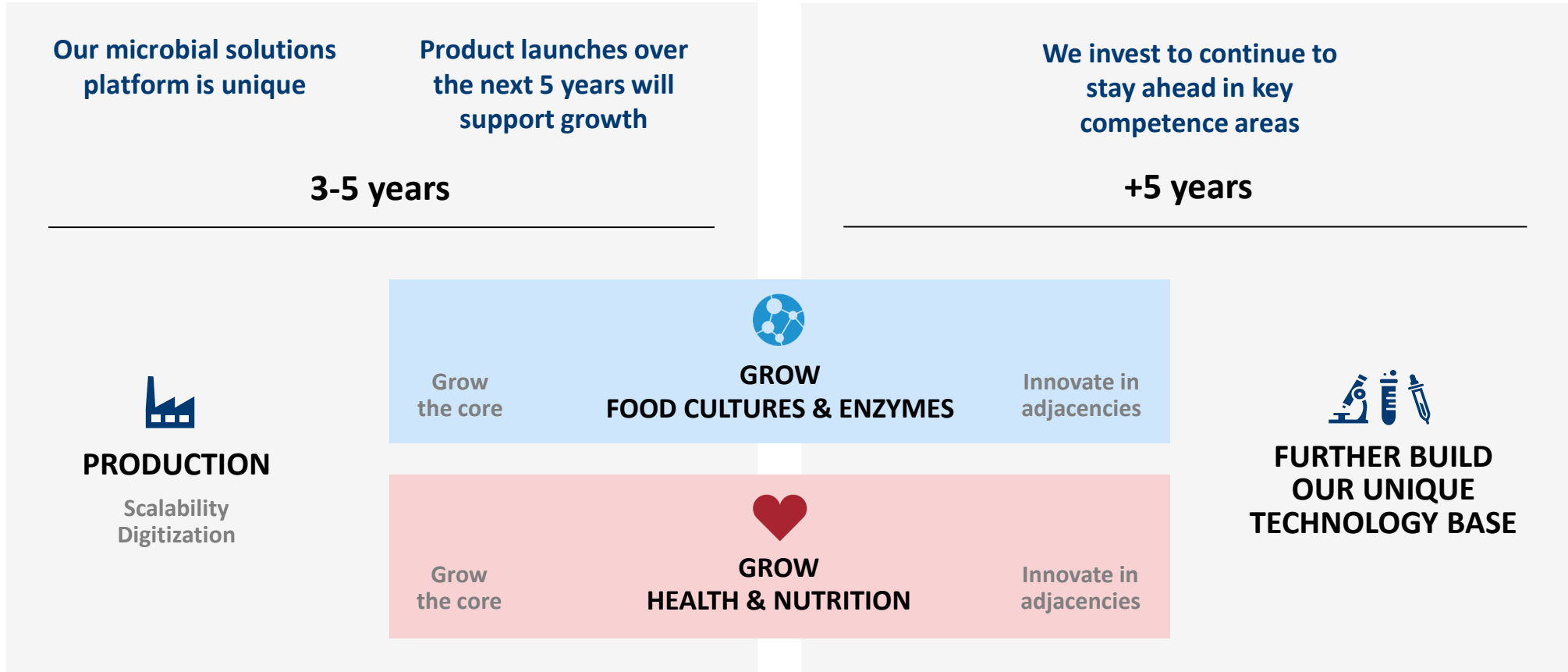
PRODUCTION



Deliver productivity improvements

Enable first-time-right scale up of novel microbes

# We are uniquely positioned for continued high growth, powered by the microbial platform



RESEARCH & DEVELOPMENT

# Key Messages

---

**Our microbial solutions platform is unique**

---

**Product launches over the next 5 years will support growth**

---

**We will invest to continue to stay ahead in key competence areas**



CUSTOMER AND SALES EXCELLENCE

# Sales excellence

**Mapping opportunities and winning customer loyalty –  
a significant barrier to entry and a sustainable  
competitive advantage**

Jacob Vishof Paulsen



CUSTOMER AND SALES EXCELLENCE

## Key Messages

---

**Our highly specialized, local and technical frontline provides unique customer value**

---

**Our harmonized and structured commercial model manage complexity and turn opportunities into profitable and sustainable growth (mass-customization)**

---

**Our customer and market mapping is industry leading and enables both strategic decisions and project execution on same platform**



# Local understanding, expert competencies and mass-customization are key to meet customer needs - and drive profitable growth

## Highly fragmented and diverse customer base ...

**>25,000**

global dairy producers  
(~3,000 served directly by Chr.  
Hansen)

**>90%**

of customers are  
only in one country

- ▶ High fragmentation and degree of local customer base
- ▶ Largest global accounts have +100 factories
- ▶ Variation from high scale plants to specialty cheese producer
- ▶ Decision makers varies from owner-operator, to complex procedures with +50 involved stakeholders
- ▶ Local language and physical closeness are key

## Local customer understanding is key

## ... with customers demanding specialized products

**>3,000**

types of cheese

**>1,000**

dairy product launches in  
Germany alone in 2017

- ▶ Local preferences on taste and texture varies
- ▶ Differences in production methods across geographies
- ▶ Variations in milk base (e.g. protein level)
- ▶ Implementation of microbial solutions for dairy production is complicated and require expert attention

## Expert competencies and customization are key

# Our frontline and commercial model form a competitive advantage

**More local, specialized and direct sales force vs. competition**

**Deep and longstanding customer relations**

- ▶ **Direct and focused** sales force calling on largest customers
- ▶ Experienced salesforce with **~8 years of average tenure**
- ▶ **95% of sales force holding master degrees** and 86 commercial employees are green belt six sigma certified

**Technical expertise and laboratories located close to customers**

**World class technical support available globally**

- ▶ State of the art **laboratories strategically located** around the world manned by experts
- ▶ Fast **mobilization of technical expertise and testing** close to customer sites

**Global logistics capabilities services the entire world**

**Strengthening sensitive customer supply chains**

- ▶ **Global coverage of logistics network** enabling servicing of any customer site despite location
- ▶ Local **warehouse centers securing reliable servicing** of sensitive customer supply chains

**One global commercial model = One commercial language**

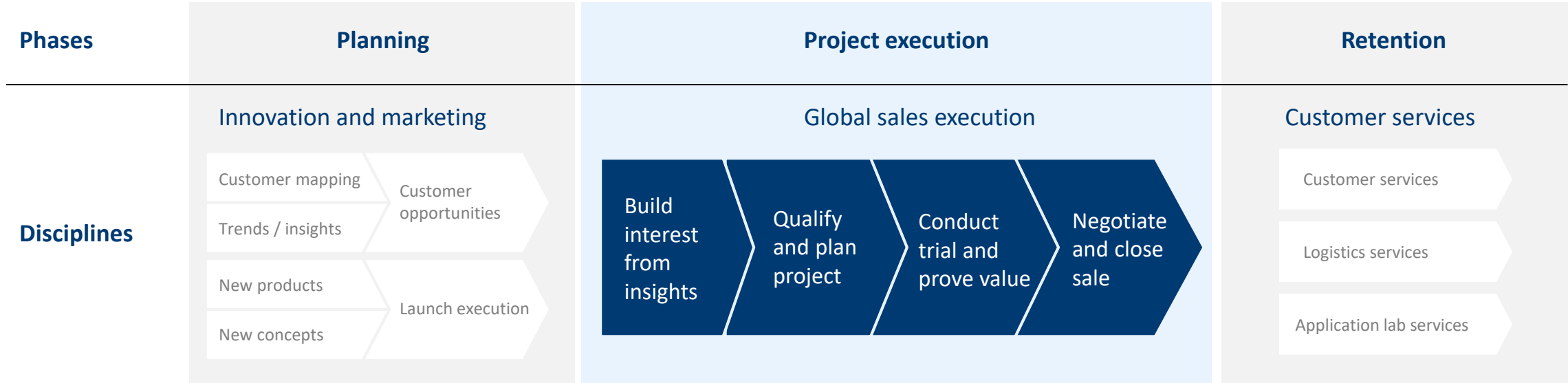
**Seamless connection between global and local**

- ▶ Same roles, concepts, tools and training across the world resulting in **one joint vocabulary**
- ▶ Strong informal networks providing **easy sharing of knowledge** and replication of successes (local <=> local)
- ▶ Efficient **activation of global experts** around the world
- ▶ Optimal **utilization of resources** at customer and Chr. Hansen

**FOCUS FOR THE FOLLOWING PRESENTATION**



# One commercial model in place globally ...

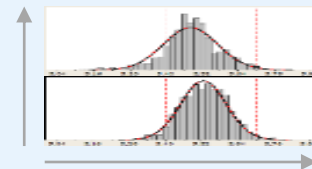


**Sales project examples**



**New product development**

New product taste with clean base using Acidifix



**Cost improvement**





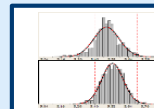
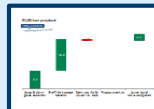

Yield improvement of cheddar production using CHY-MAX® M



**Quality improvement**

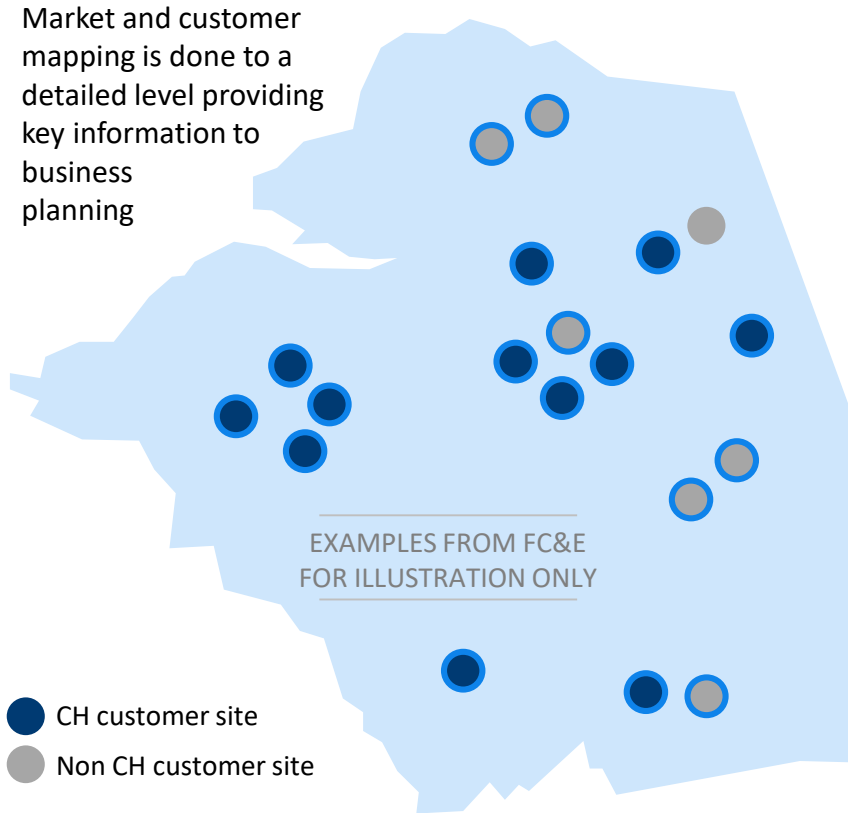
Extension of shelf-life using Bioprotection

# ... with one CRM system and harmonized training curriculum and tools

Phases	Planning		Project execution		Retention	
One CRM system	 Salesforce.com					
Harmonized training curriculum	 Sales Excellence Manual and sales training curriculum					
One harmonized set of tools	<p><b>MARKET / CUST. MAPPING</b></p>  <ul style="list-style-type: none"> <li>• Mapping of focus customers</li> <li>• Market Mapping at country level</li> </ul>	<p><b>PLANNING COMPLEX PROJECTS</b></p>  <ul style="list-style-type: none"> <li>• Identify buying influences and red flags</li> </ul> <p>MILLER HEILMAN</p>	<p><b>TRIAL EXCELLENCE</b></p>  <ul style="list-style-type: none"> <li>• Trial charter</li> <li>• Involvement of application teams</li> <li>• Use of G6</li> </ul>	<p><b>VALUE-BASED SELLING</b></p>  <ul style="list-style-type: none"> <li>• Value-based sales approach</li> <li>• Value drivers and calculators</li> </ul>	<p><b>CUSTOMER SATISFACTION</b></p> 	

# 95% of relevant dairy market mapped at product and country level - and 75% can even be 'drilled down' to specific factory level

Market and customer mapping is done to a detailed level providing key information to business planning



EXAMPLES FROM FC&E FOR ILLUSTRATION ONLY

**~95%** of world volume mapped at product segment (e.g. cheddar, sour cream) and country level

**~75%** of world volume mapped at factory level



## Market mapping

- ▶ Mapping of dairies providing overview of opportunity landscape
- ▶ Key input for strategy and innovation target areas (e.g. global consolidation of local business cases)
- ▶ Enables informed prioritization and planning of budgets, resources and competencies

### Market mapping



FOR ILLUSTRATIVE PURPOSES



## Customer and factory mapping

- ▶ Mapping of factories incl. product lines, production quantities and cost-in-use data
- ▶ Mapping of key stakeholders and decision-making process
- ▶ Enables informed mobilization of resources to fit customer situation and specific customer activity planning

### Customer mapping



FOR ILLUSTRATIVE PURPOSES

# Customer satisfaction and project wins reflect the success of our model

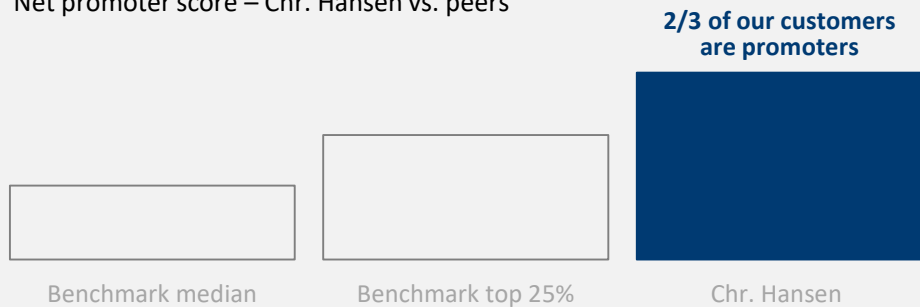
Customer Satisfaction dashboard



FOR ILLUSTRATIVE PURPOSES

## Customer satisfaction higher than peers

Net promoter score – Chr. Hansen vs. peers



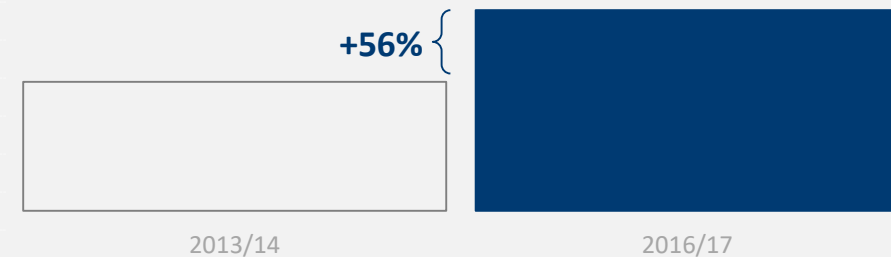
Business Manager dashboard



FOR ILLUSTRATIVE PURPOSES

## Strong uptake in projects won

Number of projects won – example from FC&E EMEA



Live dashboards in salesforce with 'drill-down' opportunity to any organization unit, country, customer and product segment.

CUSTOMER AND SALES EXCELLENCE

# Key Messages

---

**Our highly specialized, local and technical frontline provides unique customer value**

---

**Our harmonized and structured commercial model manage complexity and turn opportunities into profitable and sustainable growth (mass-customization)**

---

**Our customer and market mapping is industry leading and enables both strategic decisions and project execution on same platform**



FINANCIAL TARGETS

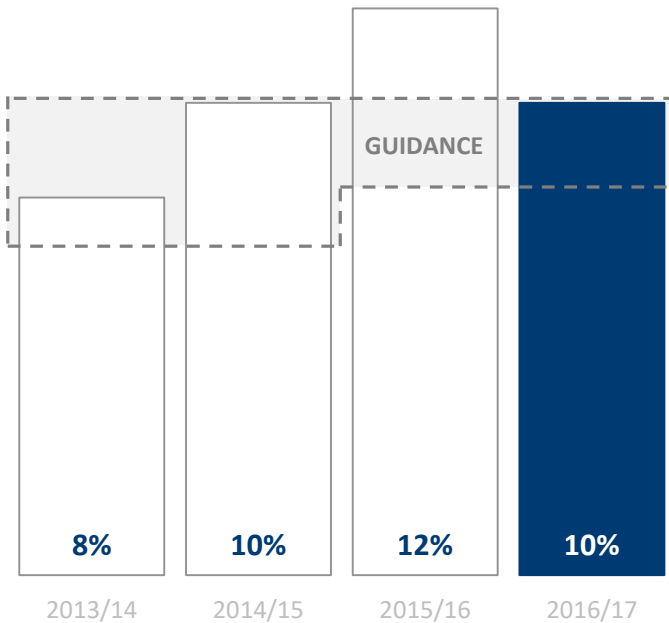
# Financial targets

Søren Westh Lonning



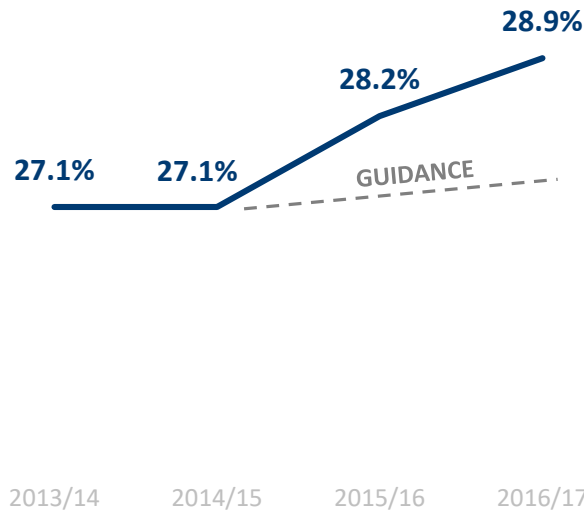
# We have reached or exceeded our Group guidance for growth, EBIT and Free cash flow

Organic growth target exceeded with annual rates of 10-12%



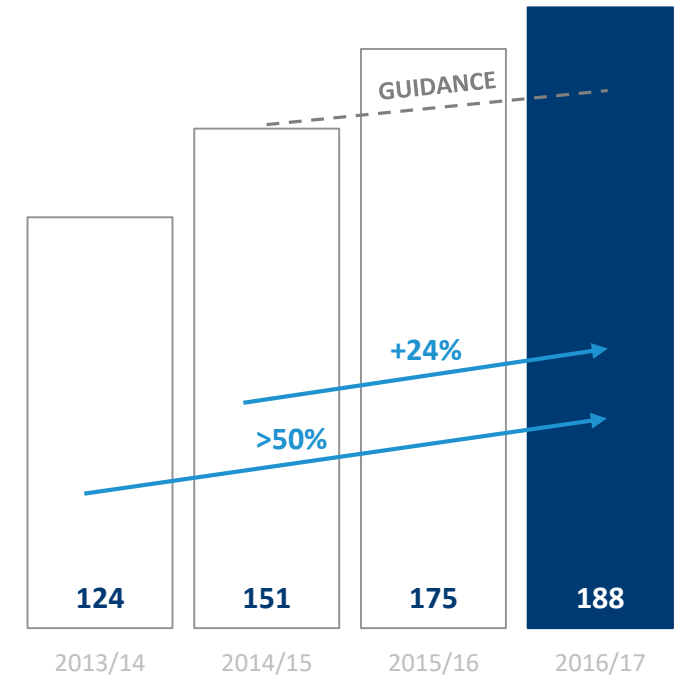
Guidance: 8-10% from 2015/16

EBIT margin b.s.i. has increased with 1.8%-point to 28.9% in 2016/17



Guidance: Increase from 2014/15 level

Free cash flow has increased by 24% and >50% since 2013/14



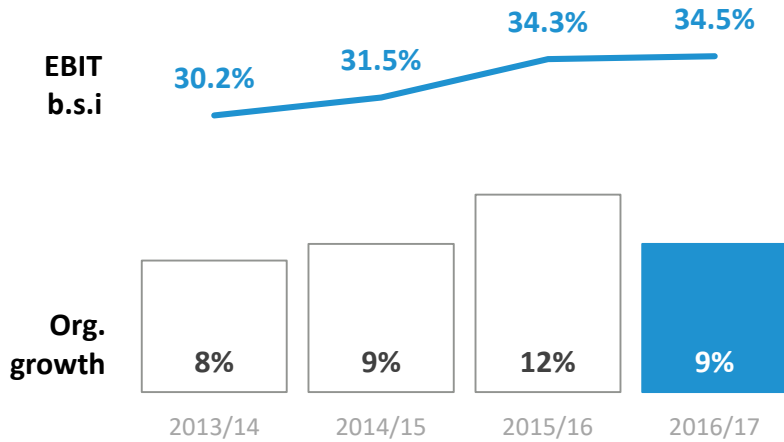
Guidance: Increase from 2014/15 level

# Within the three business areas our guidance has been met or exceeded, except for growth in Health & Nutrition



## FOOD CULTURES & ENZYMES

Annual growth between 9-12%, and a consistently increasing EBIT margin

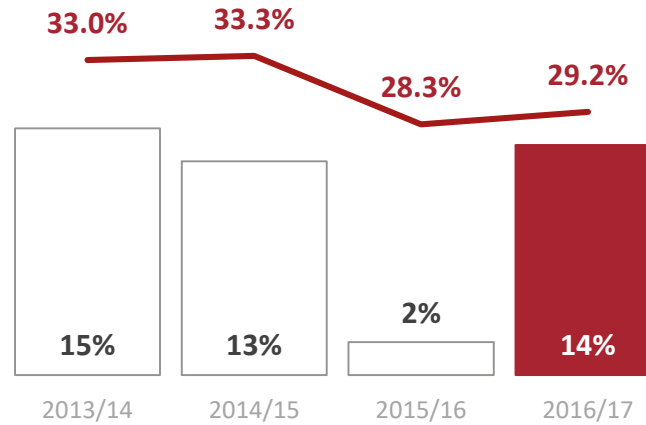


**Guidance:** 7-8% average organic growth, and an increasing EBIT margin



## HEALTH & NUTRITION

Average organic growth of 8%, and average EBIT margin of ~29%

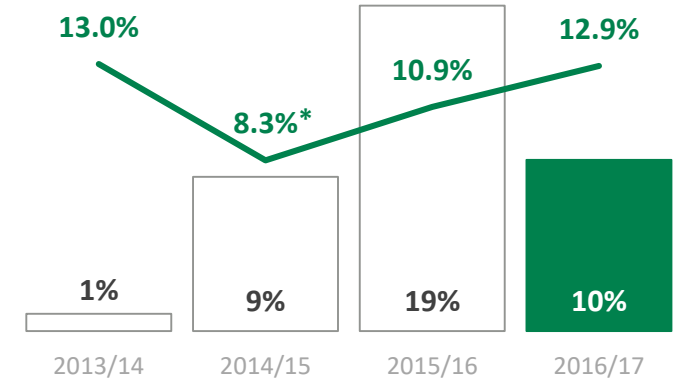


**Guidance:** +10% average organic growth, and an EBIT margin of around 30%



## NATURAL COLORS

Average organic growth of ~14%, and a margin increase of 4.6 %-points (doubling of absolute EBIT)



**Guidance:** ~10% average organic growth, and an increasing EBIT margin

\* Natural Colors was made a fully independent division, which increased cost base in 2014/15



# We will continue to pursue profitable growth through 2021/22

**8-10%** Organic growth

Pro anno from  
2017/18 to 2021/22

Supported by all business areas and with an  
average organic growth of **7-8%**  
in **Food Cultures & Enzymes**

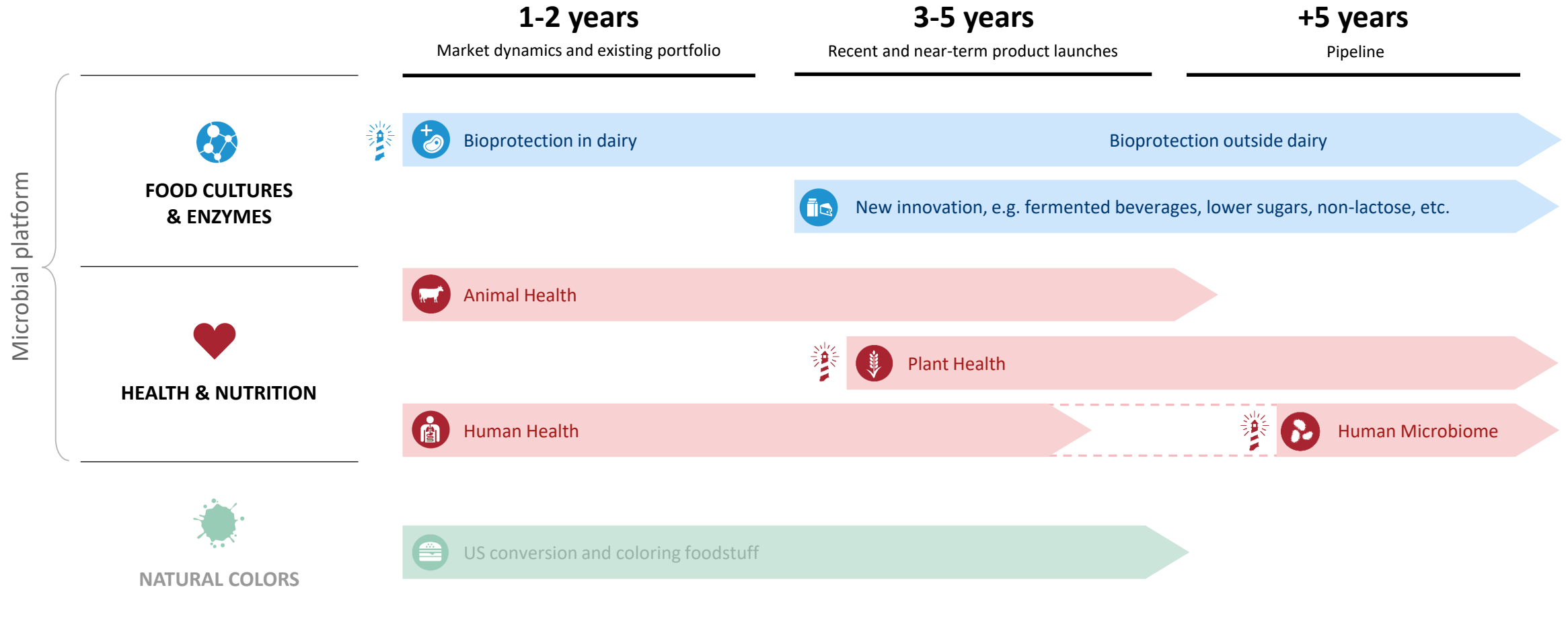
**+30%** EBIT margin

Increasing to  
above 30%

**~10%** Growth in free cash flow

CAGR growth from 2017/18 to 2021/22

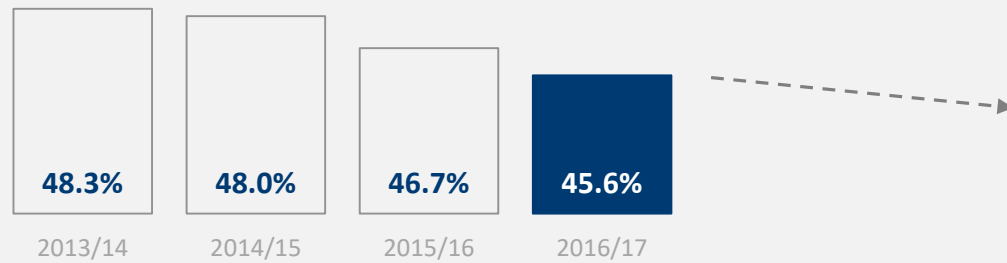
# In addition to the core dairy business, the microbial solutions platform is a key driver for strong growth



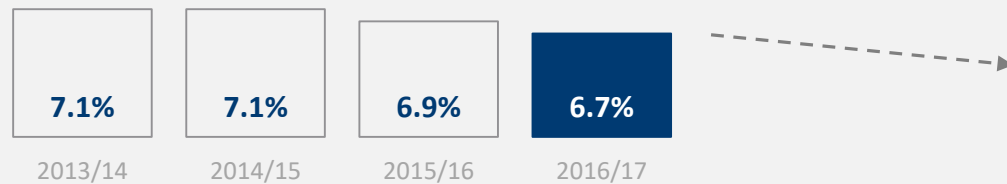
# We will drive scalability in production and Administration, and invest for growth in Sales & marketing and R&D

## Improved efficiency will drive scalability ...

Cost of sales (% of sales)

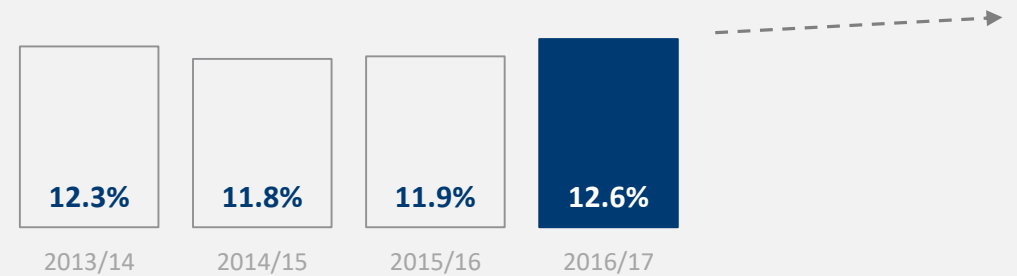


Administrative expenses (% of sales)

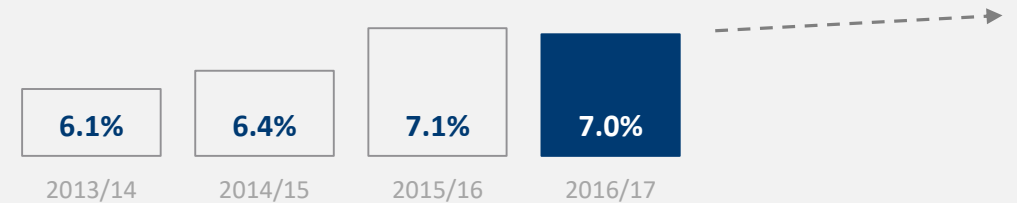


## ... While we invest for future growth

Sales & marketing expenses (% of sales)

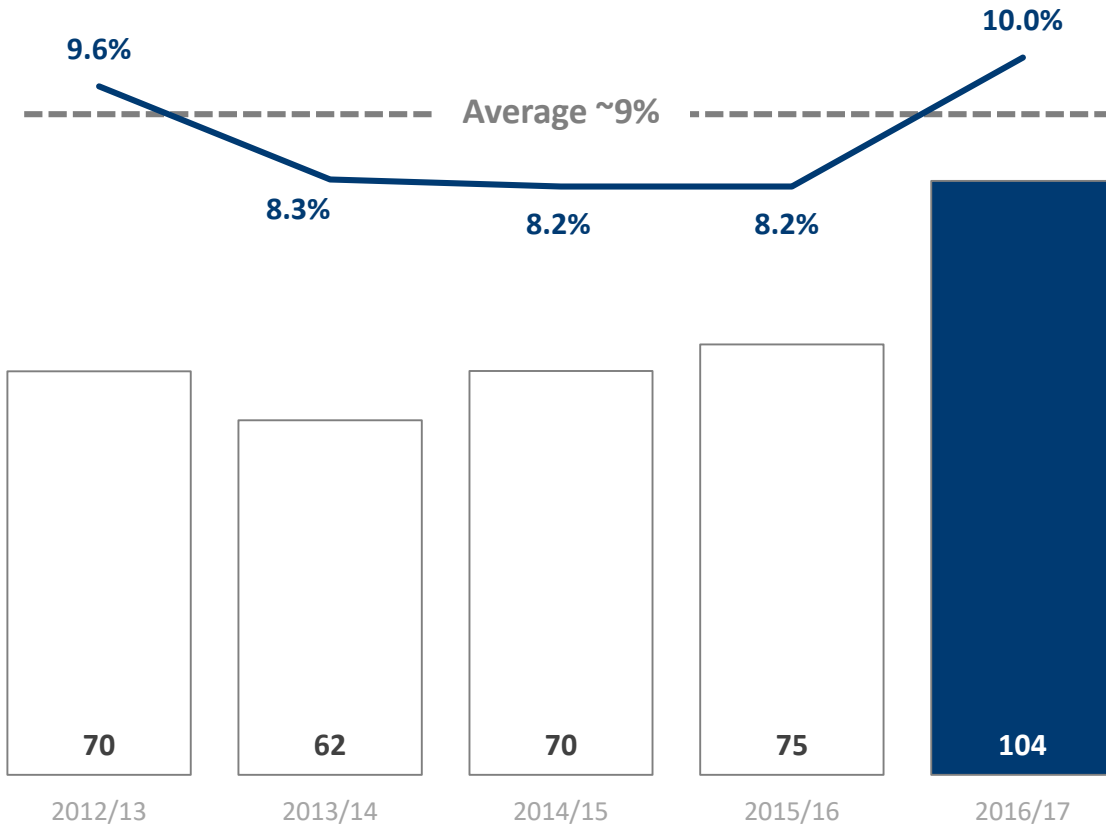


R&D expenditure incl. capitalizations (% of sales)



# We will increase investment level to enable ambitious growth targets ...

CAPEX (EURm and as % of sales)



Around 10% of sales will be directed to investments, including: →



**Dairy fermentation**  
**Freeze drying value chain (also H&N)**



**Capacity expansions**



**Natural Colors US footprint**

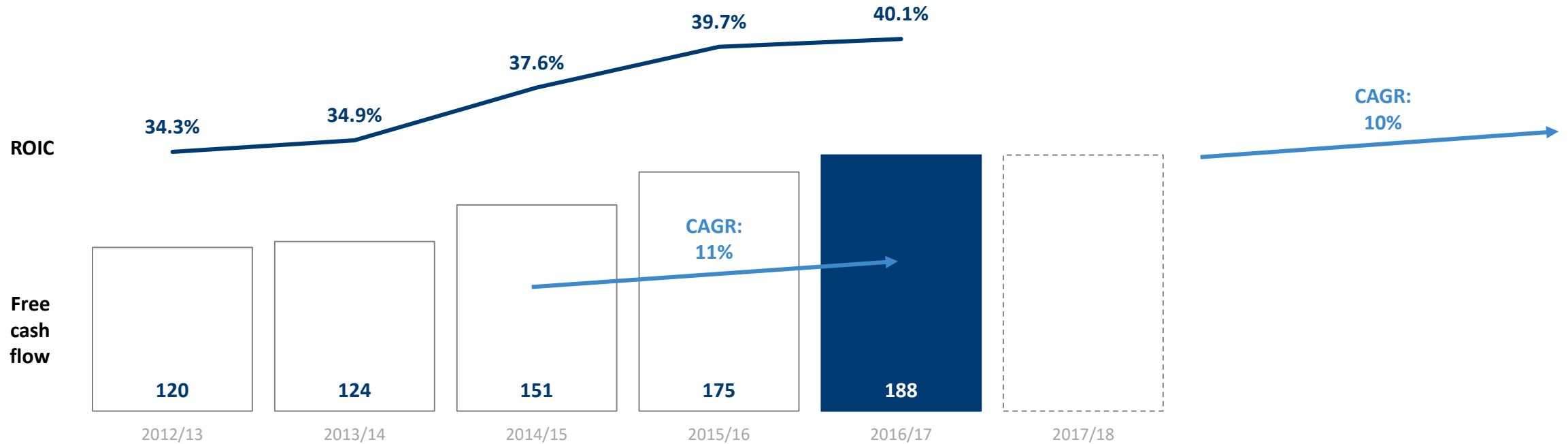


**R&D facility**

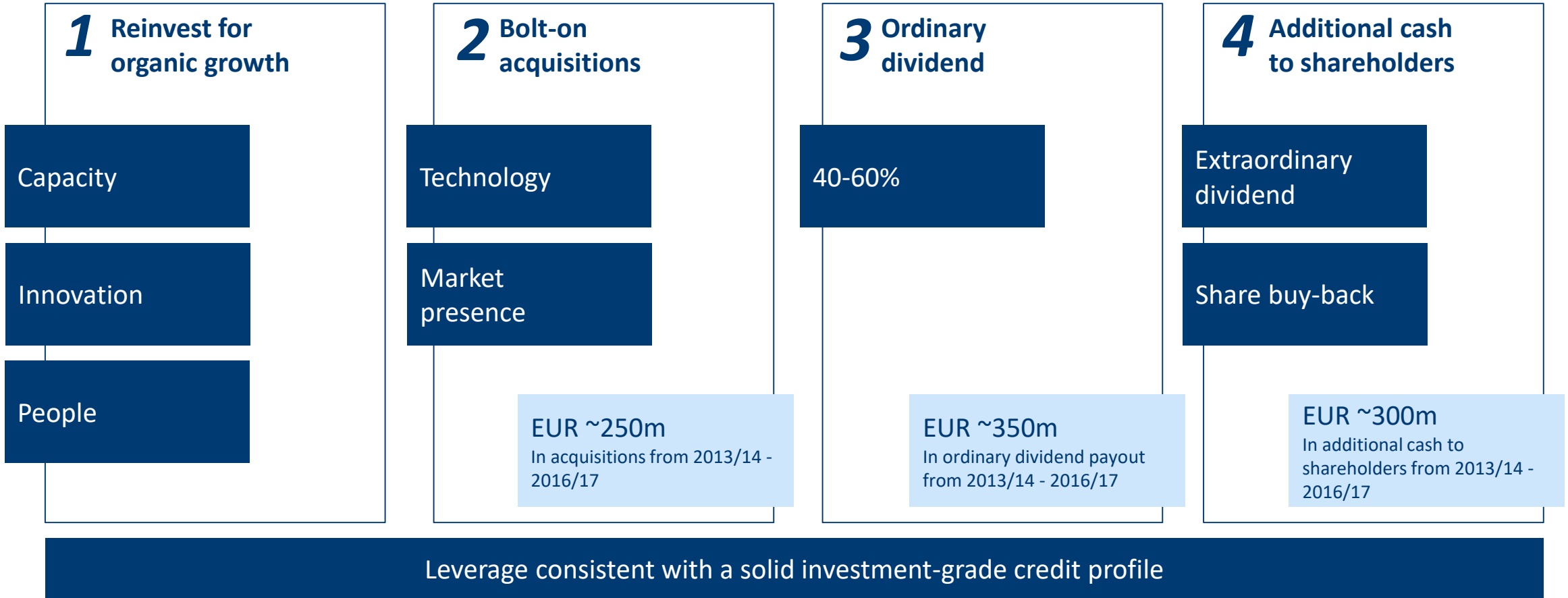
Partly offset by sale and lease back of existing HQ facilities in Hørsholm

# ... while maintaining high ROIC and a 10% CAGR in free cash flow for the period

Group returns have increased to historic high, led by Food Cultures & Enzymes, and capital deployment will continue to ensure strong returns



# Our capital priorities are unchanged with organic growth still being the top priority

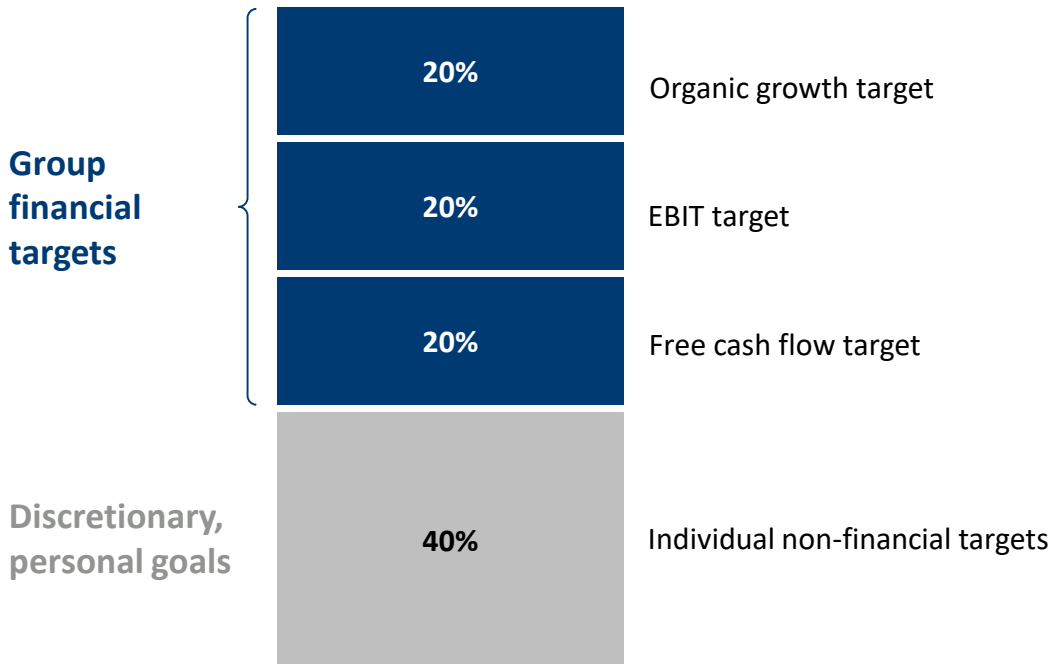


# Executive compensation – closely aligned to key metrics and with strong incentive component

## SHORT TERM

### Annual incentive program for CEO and CFO

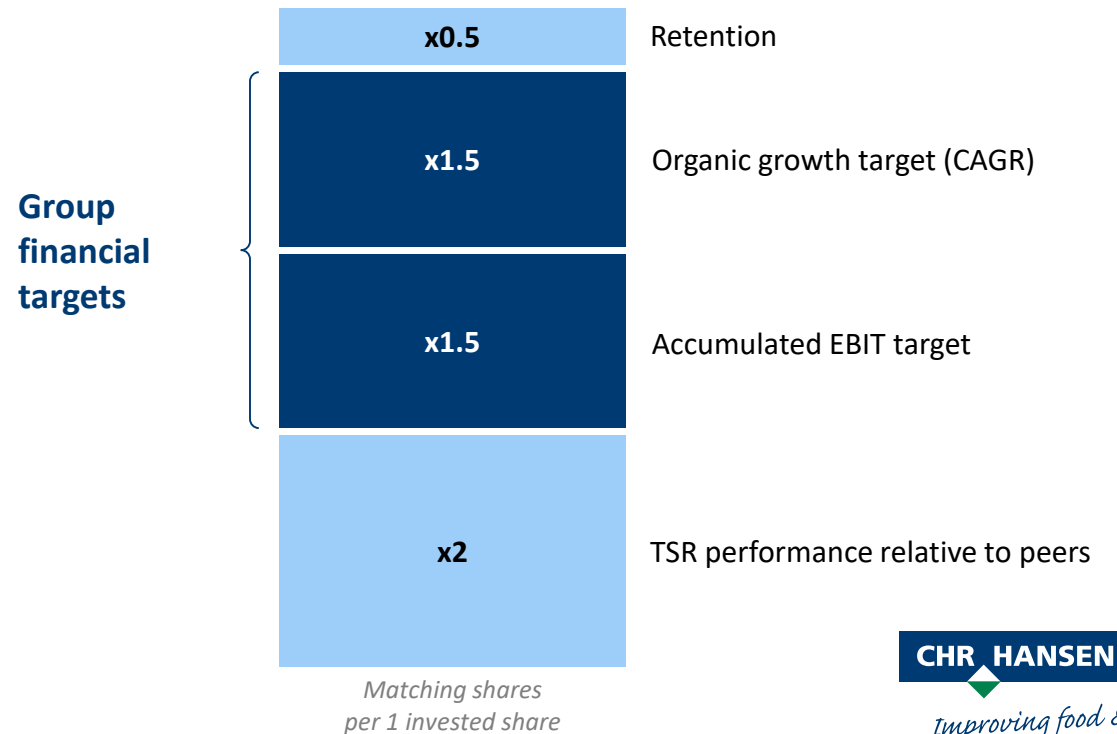
- ▶ Based on group financial targets and discretionary, personal goals
- ▶ Bonus is paid as 1/3 of the payout in Restricted Stock Units, and 2/3 in cash. Normally accounts for 25-30% of total remuneration package



## LONG TERM

### Progressive three-year incentive program

- ▶ Requires personal investment in Chr. Hansen shares to participate
- ▶ Grant value estimated (*based on Black-Scholes*) at 20-25% of the remuneration package



## What will we *still* not do?

- ✗ Pursue acquisitions in unrelated areas
- ✗ Attempt to become a full fledged pharma player
- ✗ Expand into products outside microbials/natural colors
- ✗ Lose focus on cost control and operational efficiency
- ✗ Expand enzyme business outside dairy





FINANCIAL TARGETS

# Key Messages

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**Our financial targets are ambitious and supported by our track record**

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**We invest for growth and drive scalability through efficiency**

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**Executive compensation is closely aligned to key metrics and shareholder interests**



# Closing remarks

Cees de Jong



**NN1 STRATEGY**

# Key Messages

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**Nature's No.1  
Sustainably –  
evolution, not  
revolution**

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**Macro trends,  
including global focus  
on sustainability, will  
support Chr. Hansen**

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**Unique microbial  
solutions platform  
supports high organic  
growth**



# We are a front-runner on sustainability



## Better farming

We help feed the growing population by promoting sustainable agriculture

Expand reach of natural plant protection by 25m hectares (2025)



## Good health

We improve global health through healthier, safer and more products

Launch 6 new products with a documented health effect (2022)



## Less waste

We help customers reduce food waste and improve yield and productivity

Reduce global yogurt waste by 1.2m ton (2022)



# 81%

81% of Chr. Hansen's revenue contributes to the UN Global Goals

- validated by PWC

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