

IWC
PARIS
2008



5th International Whey Conference

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Future for the whey products market from a whey processor's perspective



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3A Business Consulting**

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Introduction

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Whey market overview

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Lactose market overview

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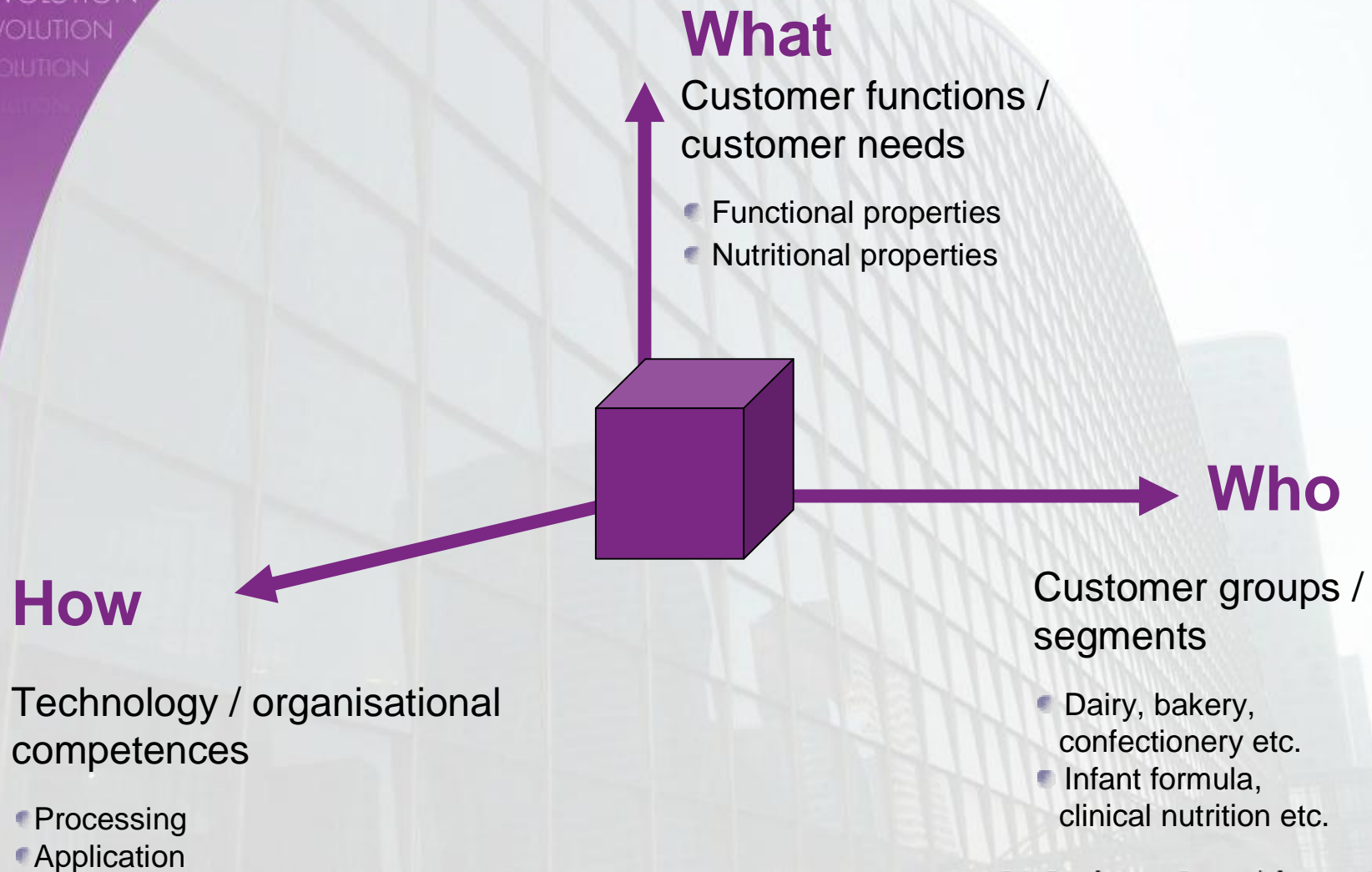
Market and industry dynamics





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3 simple strategic questions for a whey processor





Key analytical steps in developing a whey processor's strategy

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External perspective

- Market size
 - Product categories / specific ingredients
 - Volume, value, growth
- Customers
- Consumers
- Competition

Internal perspective

- Sales & marketing capabilities to serve the chosen markets, customers etc.
- Application know-how for key end-user sectors
- Mastering of cost effective processing technologies
- Availability of raw material

● Strategic assessment

- Strategic platform
- Strategy definition





Key analytical steps in developing a whey processor's strategy

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Focus of today's presentation

External perspective

- Market size
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- Customers
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Internal perspective

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● Strategic assessment

● Strategic platform

● Strategy definition





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Whey products universe

Added-value level

Whey
raw
material

Whey I

Whey II

Whey III

Applications.

- Pharma
- Nutrition
- Health care
- Personal care
- Food
- Feed

~ Cheese
whey

~ Casein
whey

~ Whey
powder

~ DWP

~ WPC35

~ Lactose

~ Permeate
powder

~ WPC80

~ Minerals

~ Calcium

~ Others

~ Lactose-pharma
grade

~ WPI

~ WPH

~ Protein fractions

~ Lactoferrin

~ Lactoperoxidase

~ Alpha-lactalbumin

~ Beta-lactoglobulin

~ IgG

~ Osteopontin

~ Lactose

~ derivatives

● Galactose

● Lactulose

● Lactitol

● Lactobionic acid

● GOS

● Lactosucrose

● Sialyllactose

● Tagatose





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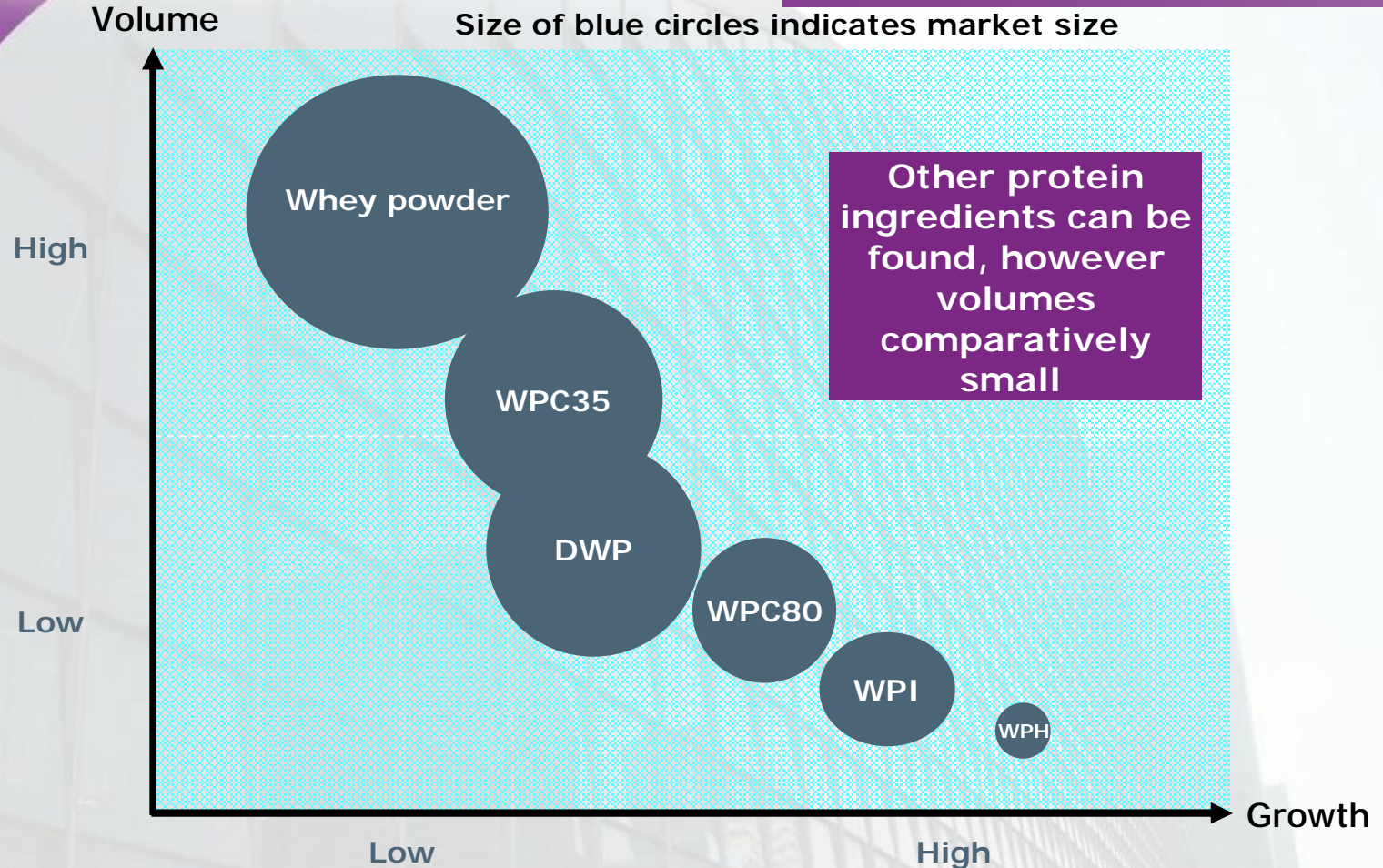
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Whey protein market - 2007

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Whey protein market represents a market volume of approx. 3,100,000 MT corresponding to a market value of approx. 3.6 Billion US\$

2004-07: Volume growth + 3% Value growth + 34%

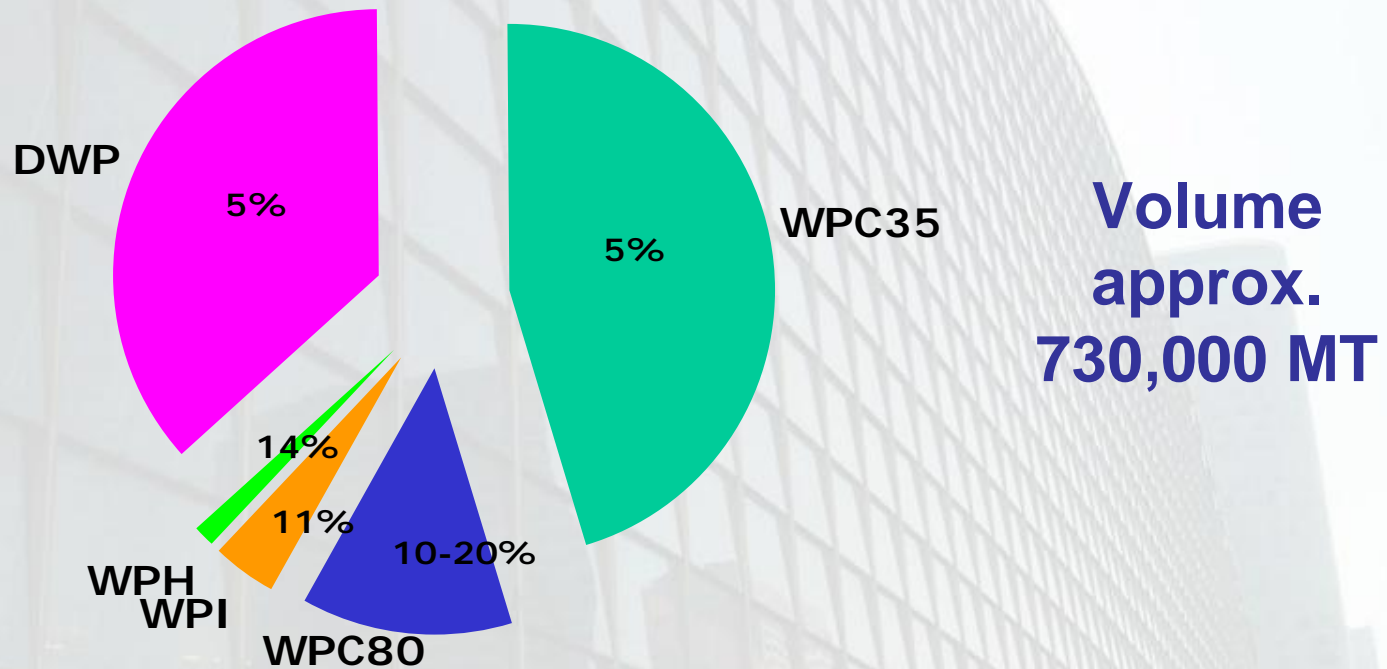




Global overview of DWP / WPC / WPI / WPH - 2007

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Market growth rates



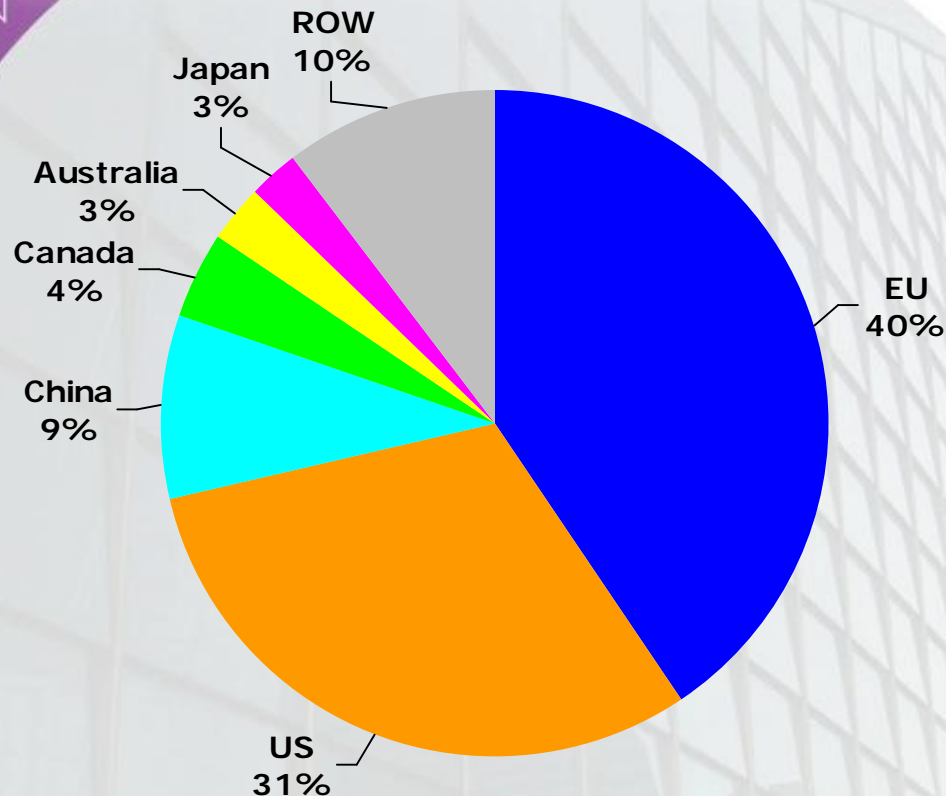
Total market volume growth 2004-07: CAGR approx. 6%





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Global overview of major whey markets - 2007



Total market
approx.
730,000 MT

- ~ The major whey producers, EU and US are also the major markets for whey products followed by China and Canada
- ~ In ROW, Asian countries represent a major market. Mexico, some South American countries as well as Russia are clearly emerging markets

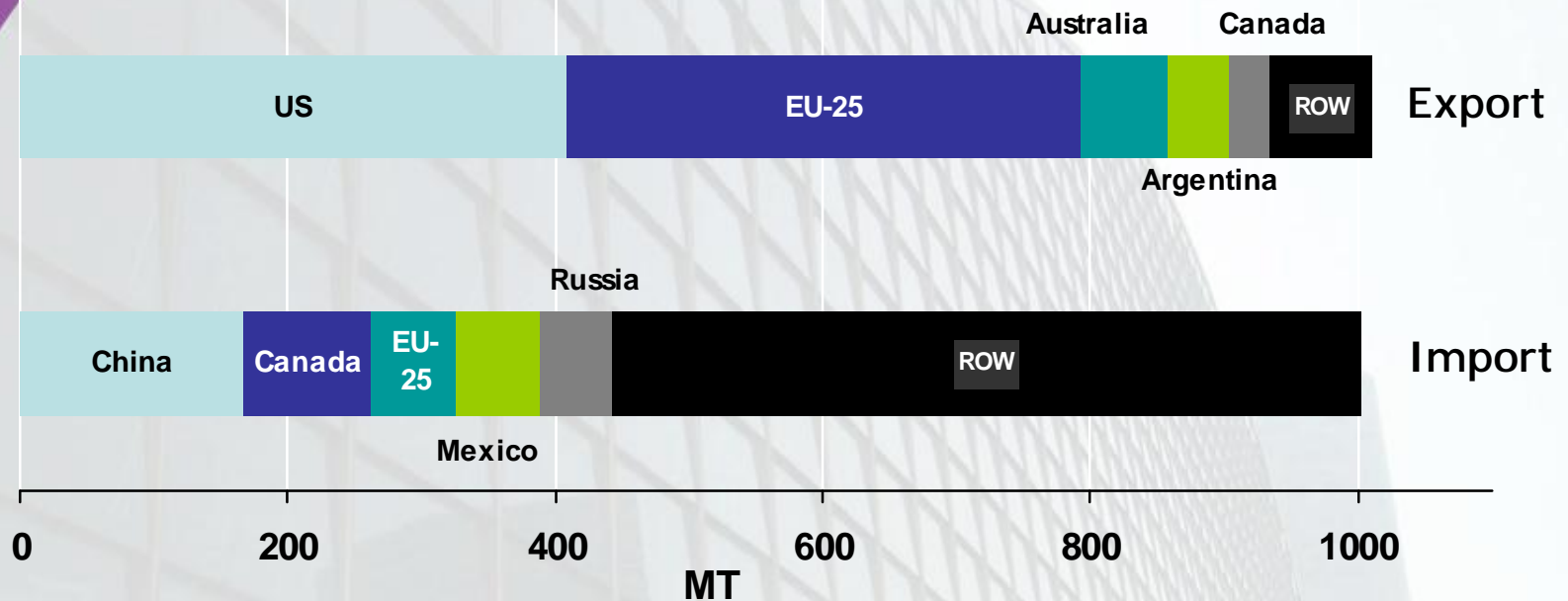
Note: Global overview of major whey markets includes the following products: DWP, WPC35, WPC80, WPI and WPH
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Global whey trade volume overview - 2007

Export / import approx. 1,000,000 MT



- ~ Whey trade has grown from approx. 700,000 MT in 2003 to more than 1,000,000 MT in 2007 with US and EU as the key exporters of whey products accounting for approx. 80% of global trade
- ~ In general, global whey trade is characterised by large export from the West to the East including China and emerging markets such as Mexico and Russia
- ~ In the East Japan, Korea, Thailand and Indonesia are major whey importers





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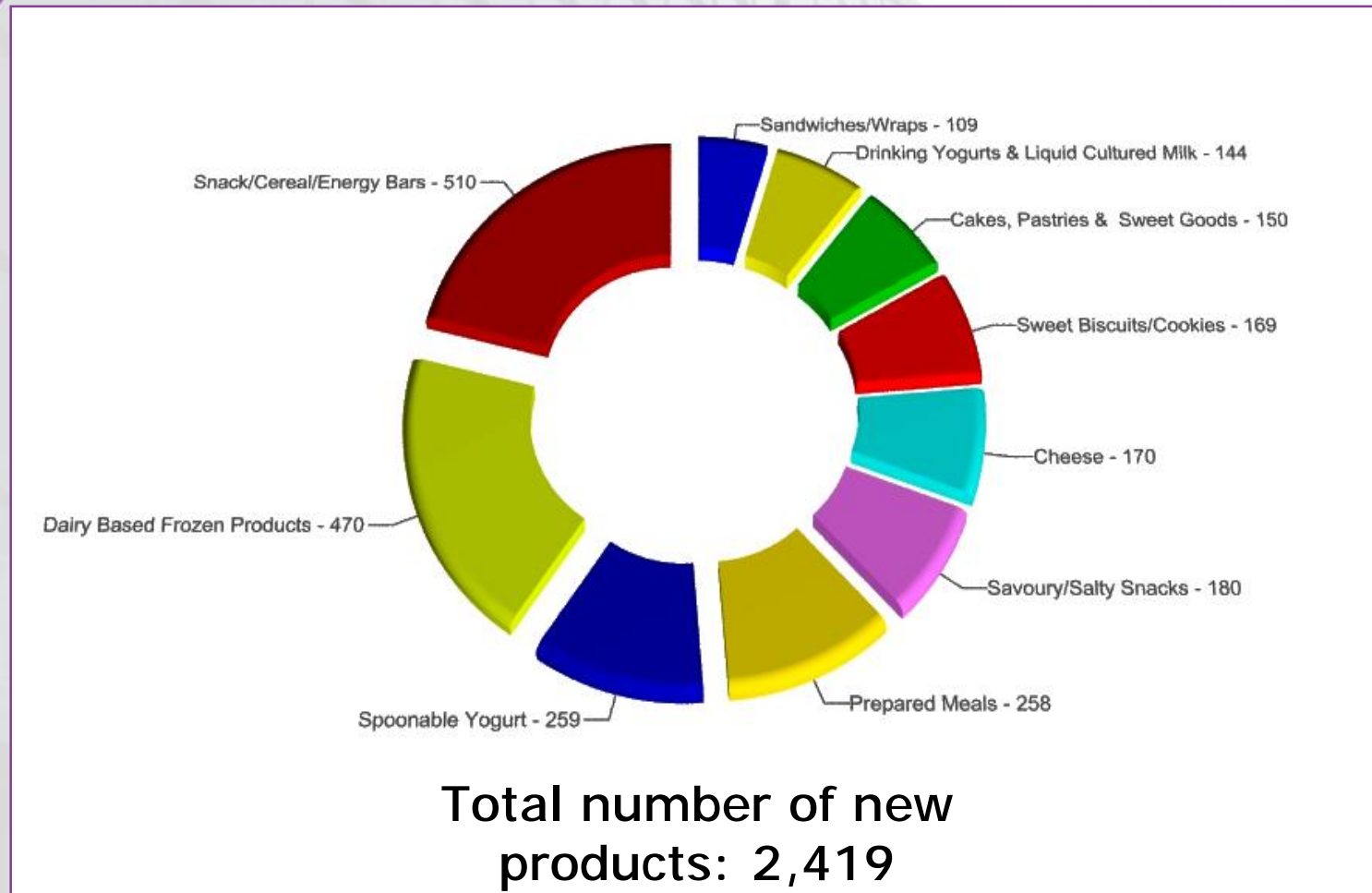
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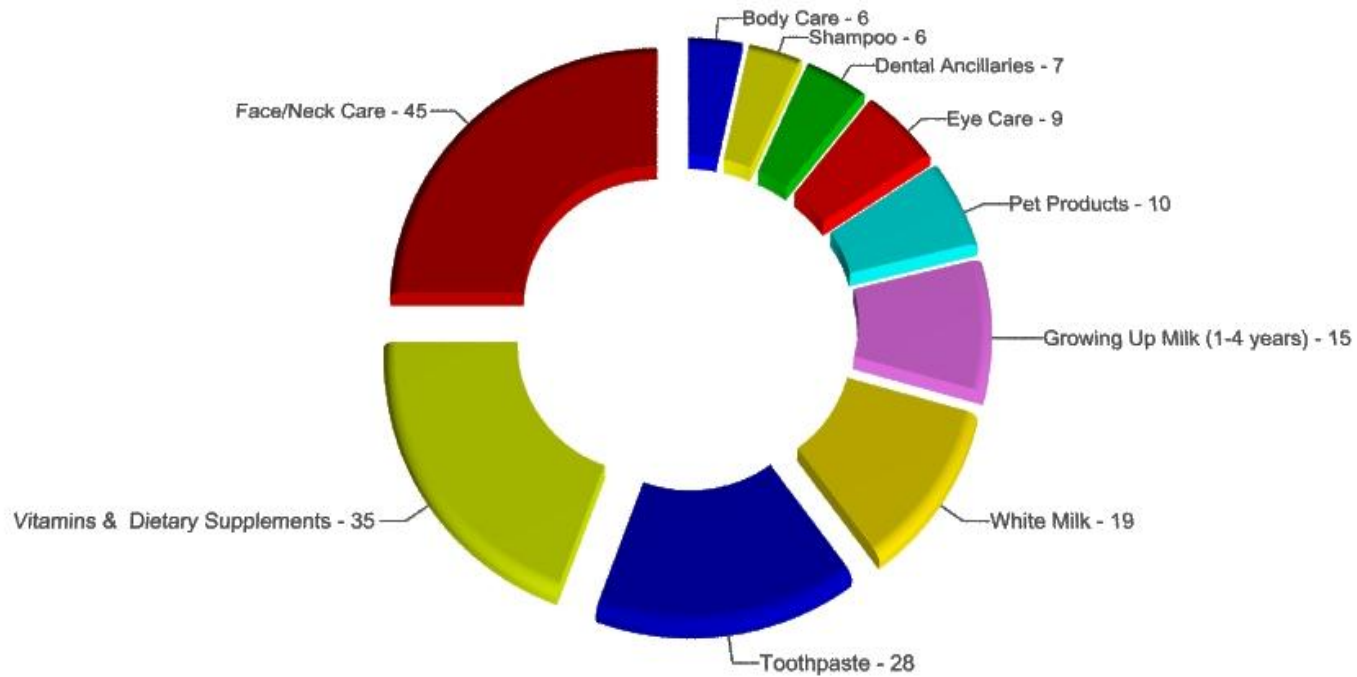
Global products launched containing WPC: 2006-08





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Global products launched containing lactoferrin:2006-08



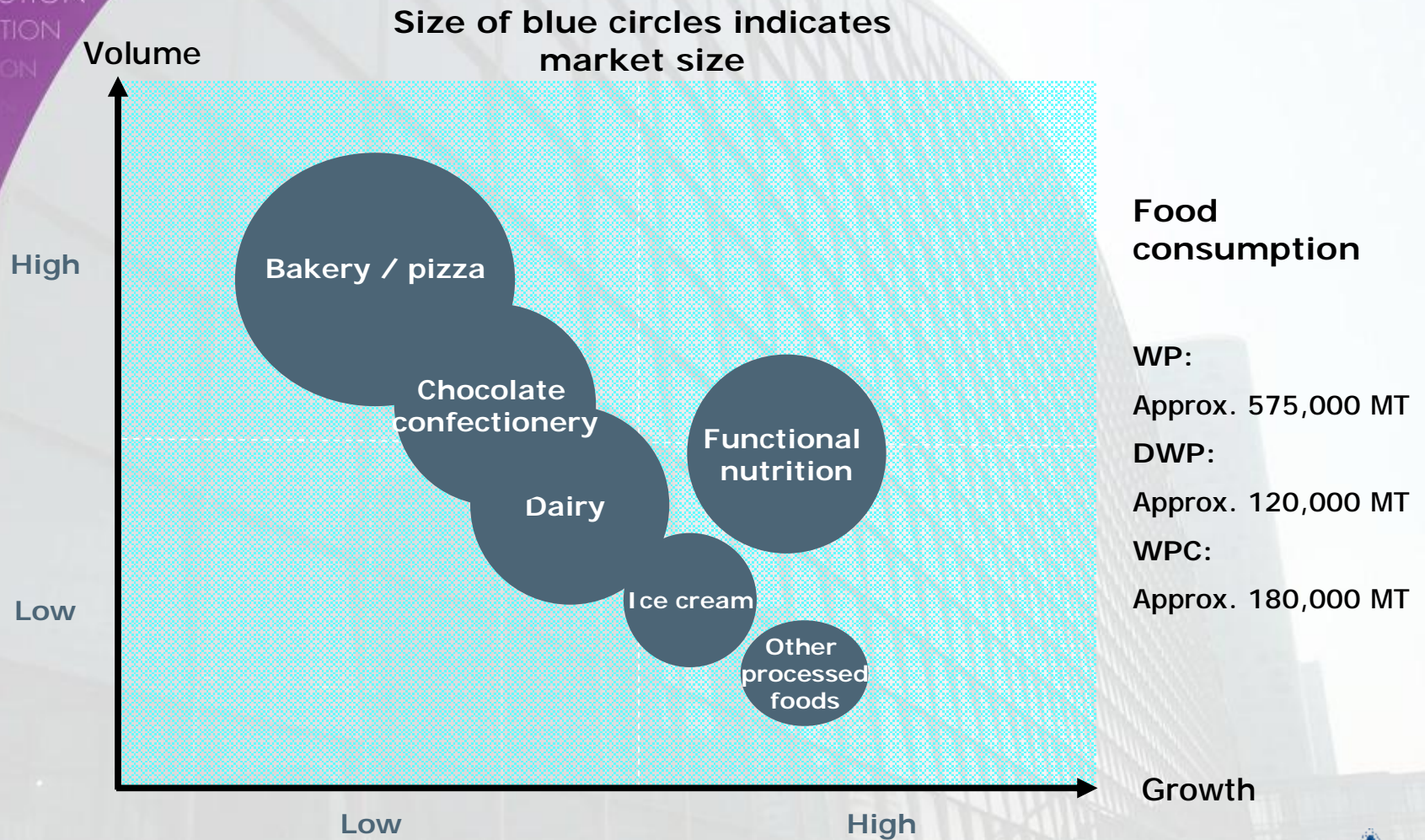
Total number of new products: 180





EU example: Usage of whey powder, DWP and WPC in major end-use sectors

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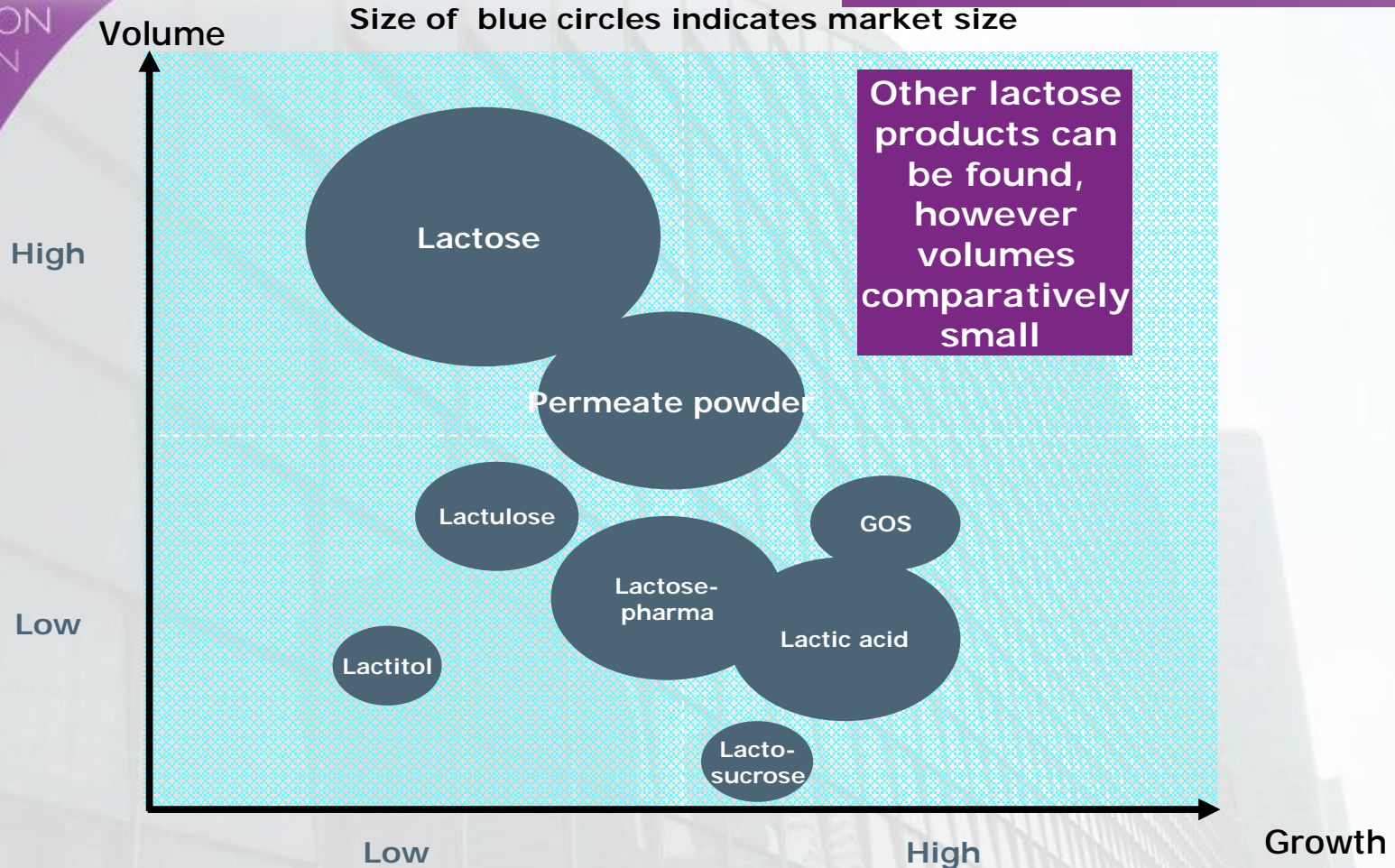
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Major lactose products market - 2007

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The lactose products market represents a market volume of approx. 1,630,000 MT corresponding to a market value of approx. 1.4 Billion US\$

2004-07: Volume growth + 8% Value growth + 114%

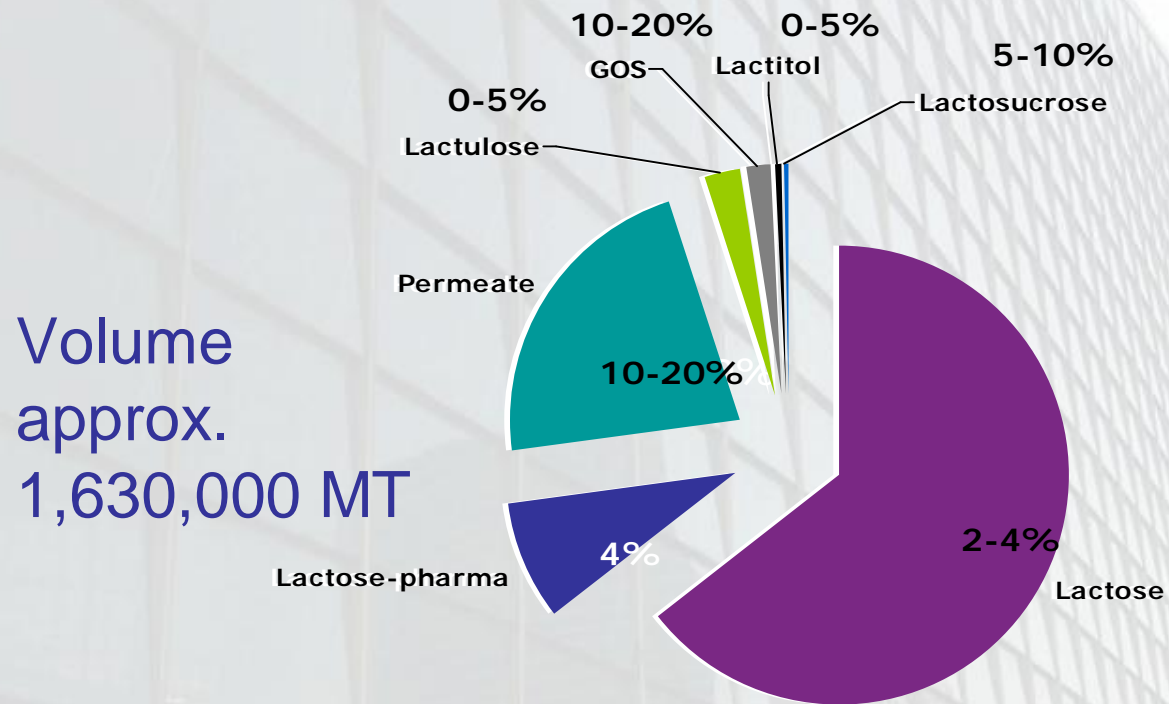




Lactose/permeate and derivatives overview 2007

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Market growth rates



Volume
approx.
1,630,000 MT

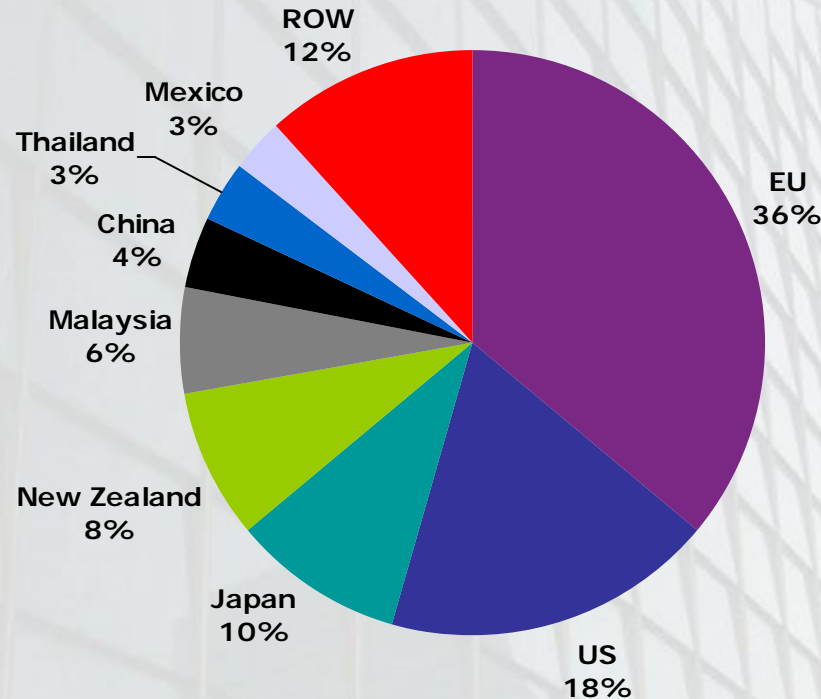
Total market volume growth 2004-07: CAGR 8%





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Global overview of major lactose markets in 2007



**Total market
approx.
890,000 MT**

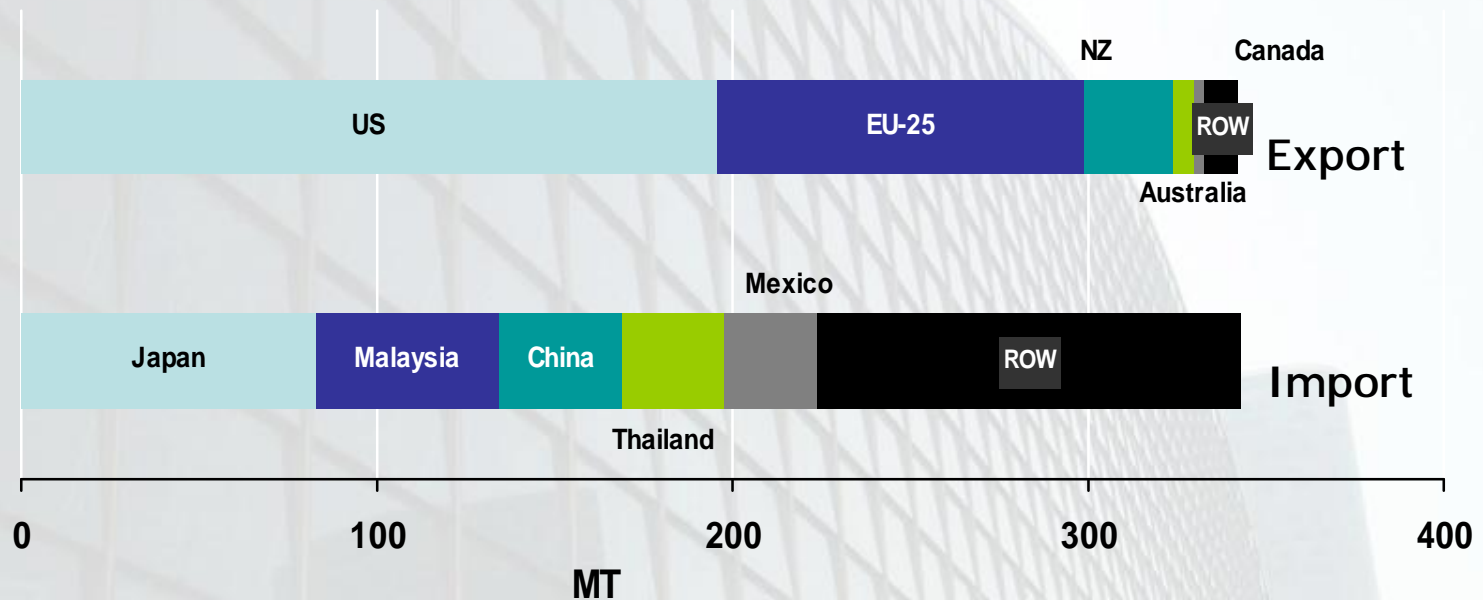
- ~ EU is the biggest lactose market in the world with more than a third of the world lactose consumption followed by US
- ~ Asian countries such as Japan, Malaysia, China and Thailand are among the larger lactose markets with lactose consumption from 30 – 90,000 MT per country. Emerging markets are found in South America





Global lactose trade volume overview - 2007

Export / import approx. 342,000 MT



- ~ World lactose trade expands steadily. From 2004 to 2007, lactose trade has grown from 256,000 MT in 2004 to 342,000 MT in 2007 corresponding to a 8-10% growth rate annually with US and EU-25 as the leading lactose exporters
- ~ Lactose is mainly imported by Asian and South American countries. Japan is a key importer with more than 80,000 MT followed by Malaysia and China





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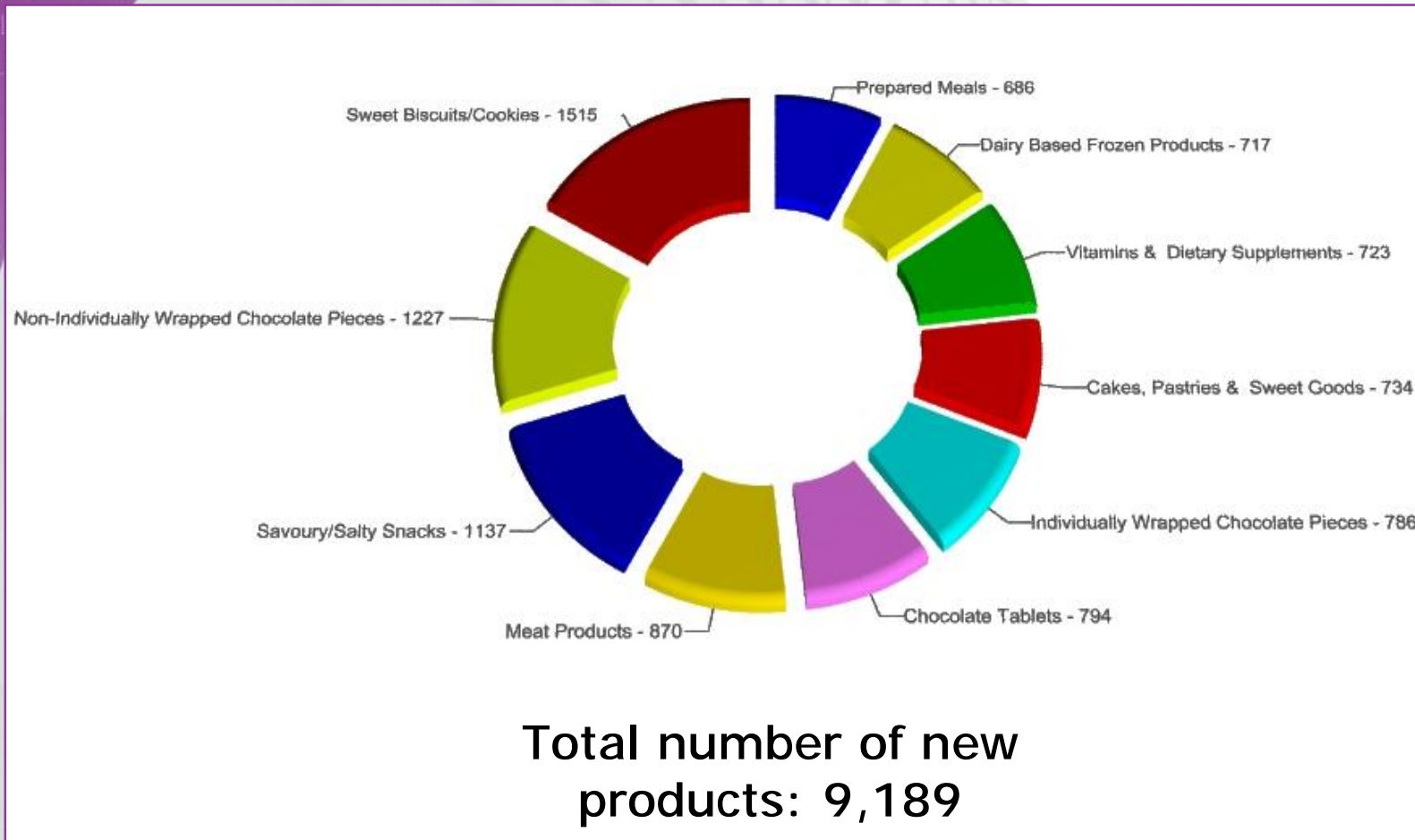
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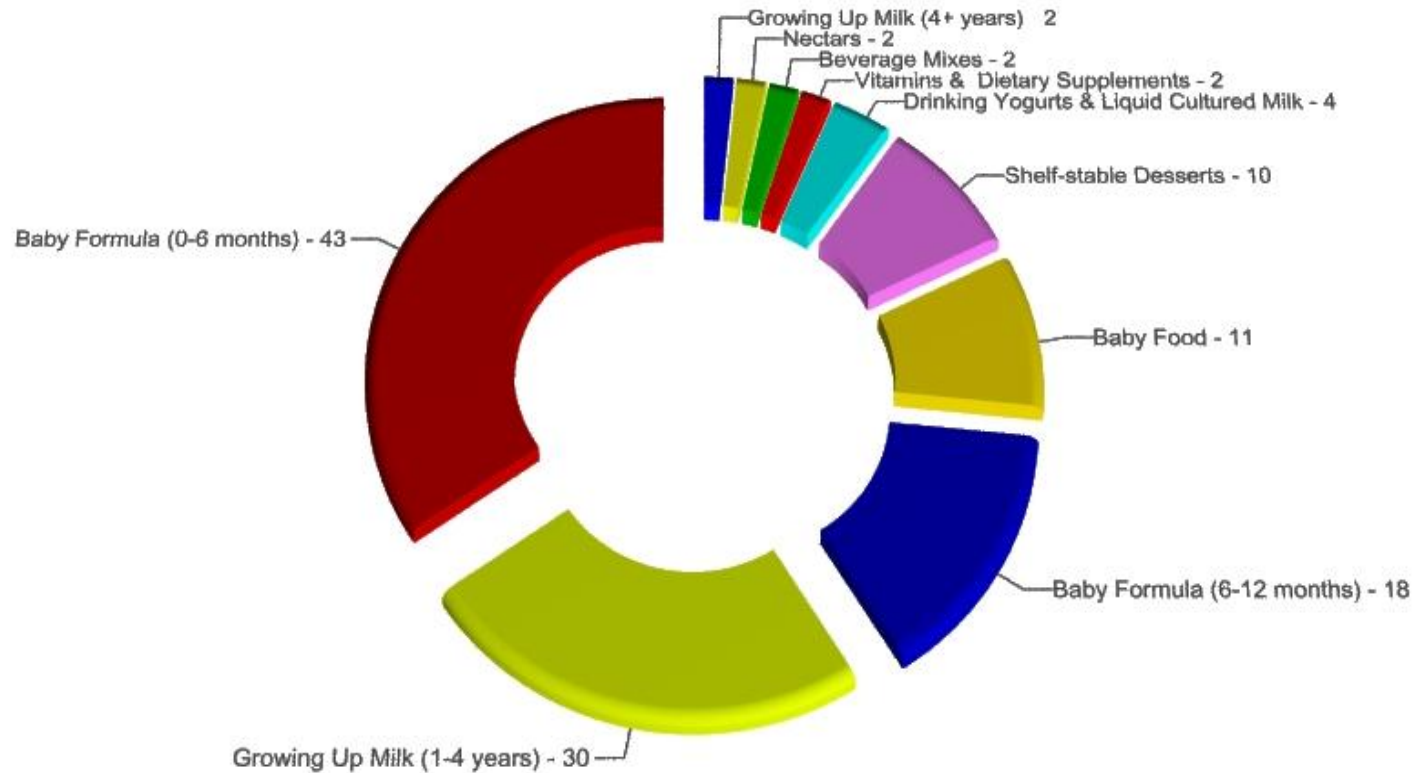
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Global products launched containing lactose: 2006-08





Global products launched containing GOS: 2006-08



Total number of new products: 124





EU example: Usage of lactose in major end-use sectors

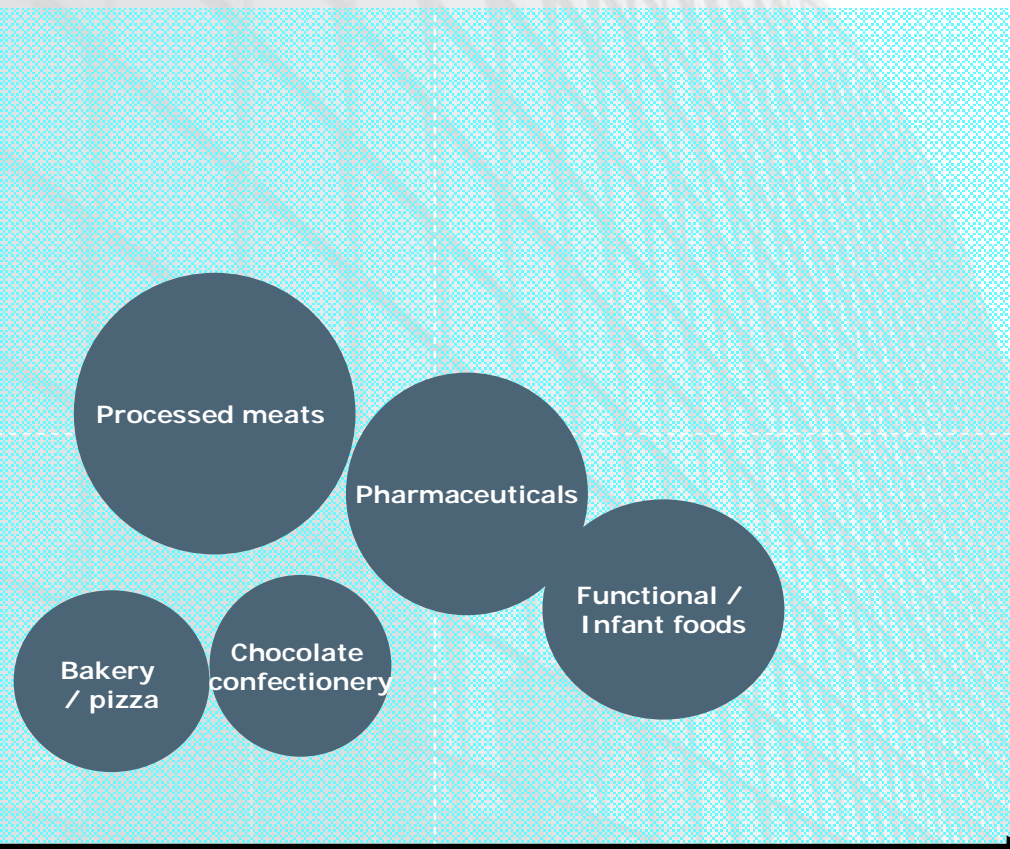
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Volume

Size of blue circles indicates market size

High

Low



EU lactose consumption approx. 315,000 MT

Growth

Low

High





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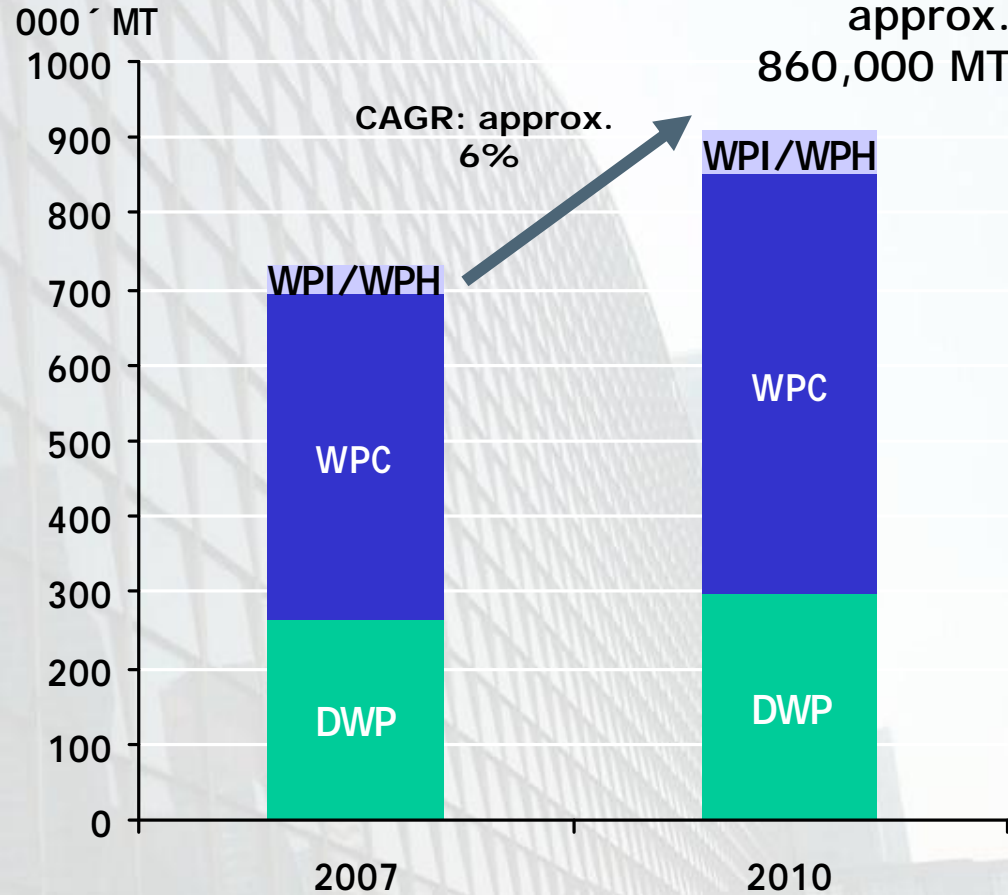
Future demand and supply dynamics 2007-2010

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● The market for whey ingredients will continue to grow both in food and nutrition applications

Market size
2010
approx.
860,000 MT

Forecast



● Volatile pricing for commodities will continue, however value added whey ingredients will be fluctuating less in price

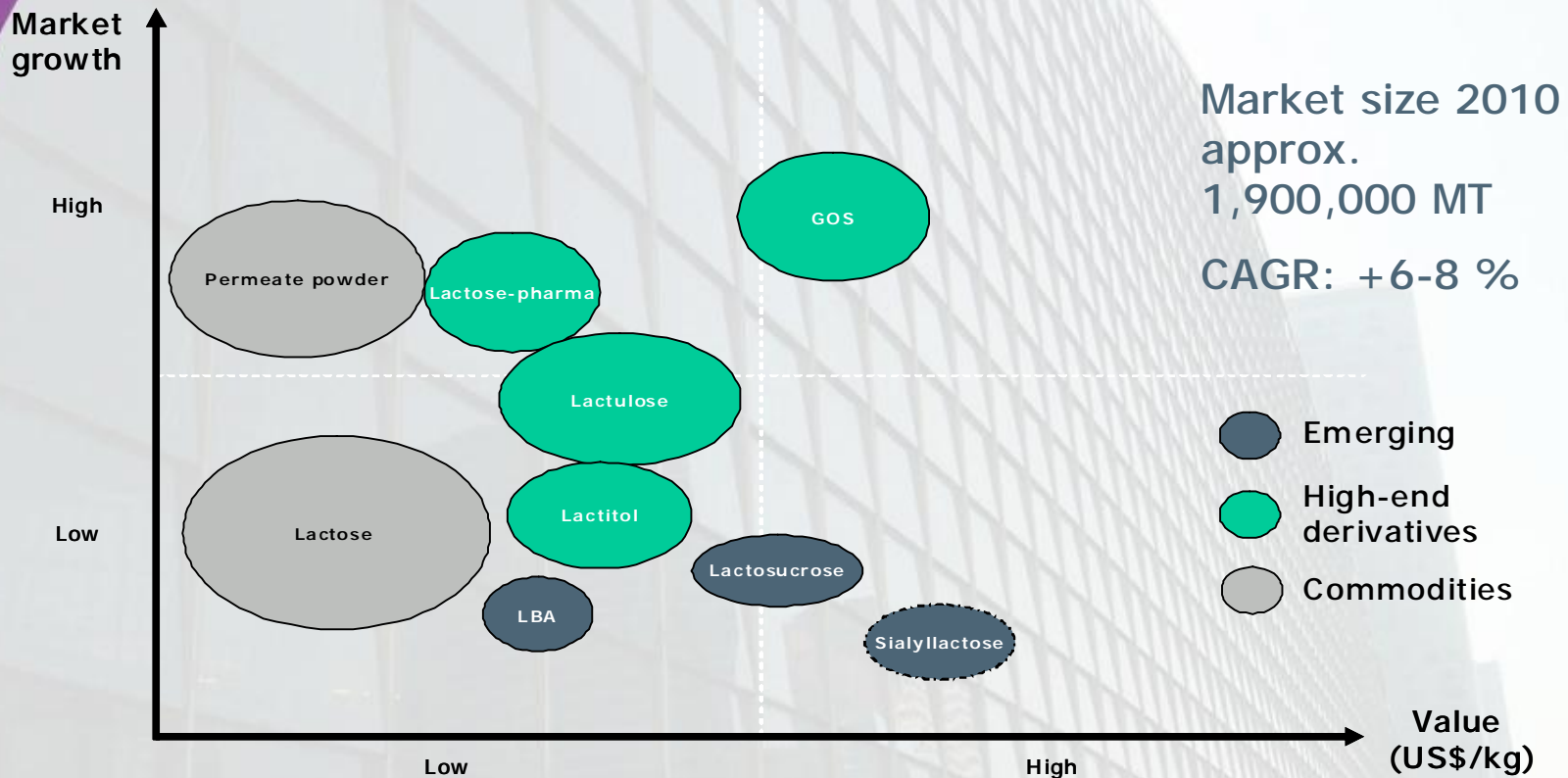




Growth opportunities ahead for lactose, permeate and derivatives 2007-2010

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- Supply of whey and permeate will continue to grow due to increase in cheese and protein production



- Permeate powder probably represents the major future challenge regarding the mentioned product portfolio





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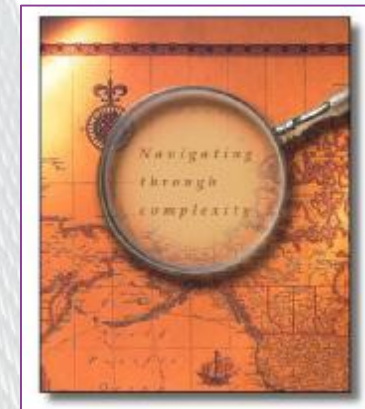
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Industry
challenges

Future industry challenges

- ~ Many ingredient businesses are global and have reached a high level of consolidation – the dairy ingredient industry will need further consolidation
- ~ Delicate balance between economies of scale (commodities) and a specialised portfolio (added-value products) adds to organisational complexity
- ~ Forming strategic alliances is perhaps one of the answers ...





Strategic alliances within milk and whey ingredient processing

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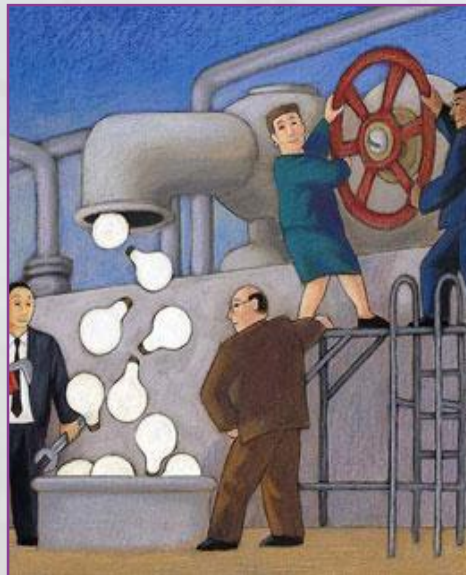
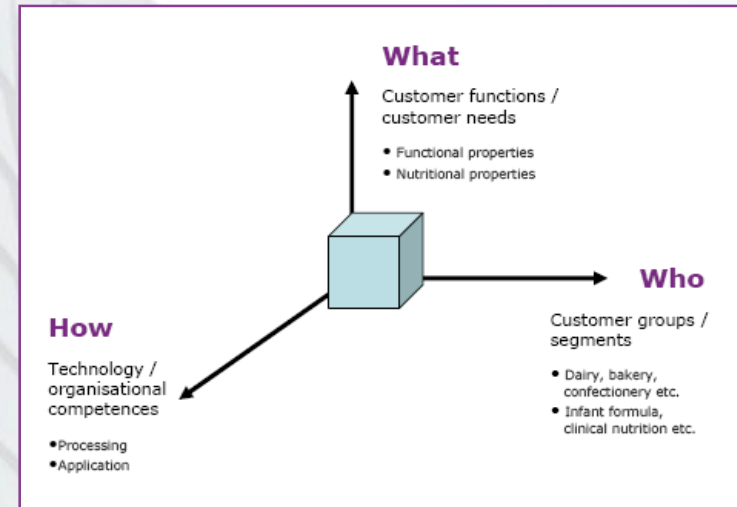




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Choose your own strategic path

~ The strategic answer to the whey processor may be more complex than the 3 simple questions – remember imitation equals commoditization



~ “INNOVATION is recognised as the single most important ingredient in any modern economy”

The Economist



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3A multi-client reports

The World Market for
Whey and Lactose Ingredients
2007-2010

OCTOBER 2008



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The World Market for
Milk Ingredients
2007-2010

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Upcoming publications – Oct 2008

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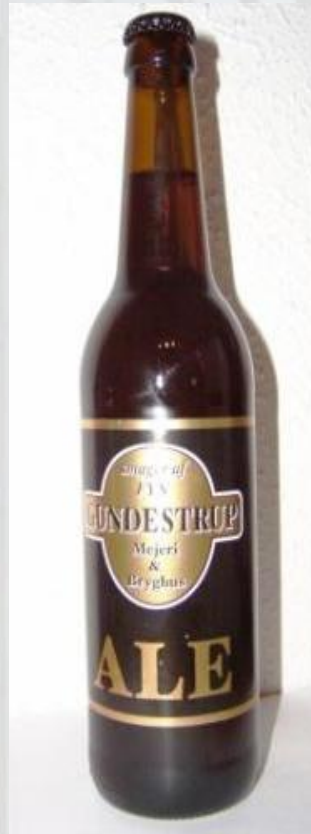
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New whey derivative launched on the Danish market – Cheers!

Denmark



Gundestrup Dairy and Brewery
– a beer made from whey

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