



# Innovation “PURAC’s Growth Engine”



Fabrizio Rampinelli  
Managing Director PURAC

# Personal introduction: Fabrizio Rampinelli

- University of Milano – Food technologies
- Bocconi school of Management (SDA) Milano Marketing
- Unilever (1986 – 2000)
  - Italy: Marketing – Sales – General Manager
  - Germany: European Marketing Manager
- CSM
  - BakeMark Italia (2000 – 2007): Managing Director
  - PURAC (2007): Managing Director

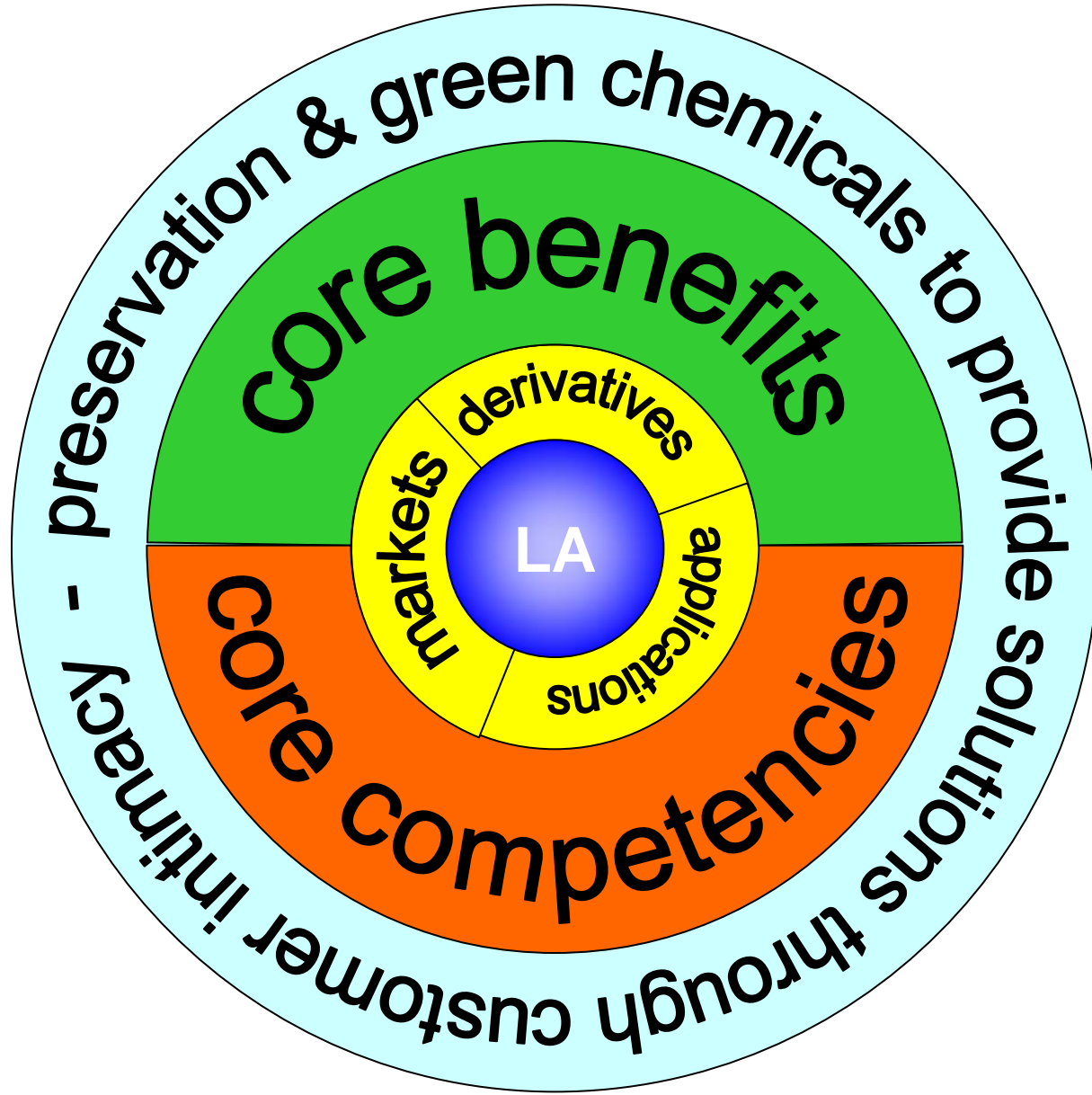


# Agenda

- Innovation at PURAC is tuned to exploit the trend of natural sustainable materials
- From Product Leadership to Customer Intimacy
- Balancing short, medium and long term efforts
- A successful story and strategic focus area: preservation
- Technology developments to increase the sustainability and CO<sub>2</sub> footprint of Lactic Acid: gypsum free technology

# PURAC is exploiting its expertise through innovation

- The potential of Lactic Acid is exploited by broadening its spectrum of applications through developments of new solutions
- Focus areas for growth:
  - Preservation
  - Green chemicals including bioplastics
- Develop new applications based on our existing product portfolio
- Improve the technology platform towards sustainability:
  - Gypsum free technology
  - Alternative substrates ('food for fuel' debate)
- Innovation resources and approach:
  - Long term versus medium term versus application support
  - Customer Intimacy
  - Patent strategy to protect and sustain our business growth



**Our transformation:  
From an “effective preservative supplier”  
To a “natural preservation solution provider”**

	Product	Benefit	Approach
70's	Lactic Acid	pH Control	Product Push
	PURASAL (Sodium Lactate)	Shelf Life Extension	Product Push
00's	Opti.Form (Sodium Lactate Blends)	Food Safety (Listeria Control)	Market Pull
	PuraQ (Ferments)	Natural Ingredients (clean label)	Market Pull
10's	2 <sup>nd</sup> Generation Ferments	Broader Micro Stability	Joint Innovation Projects

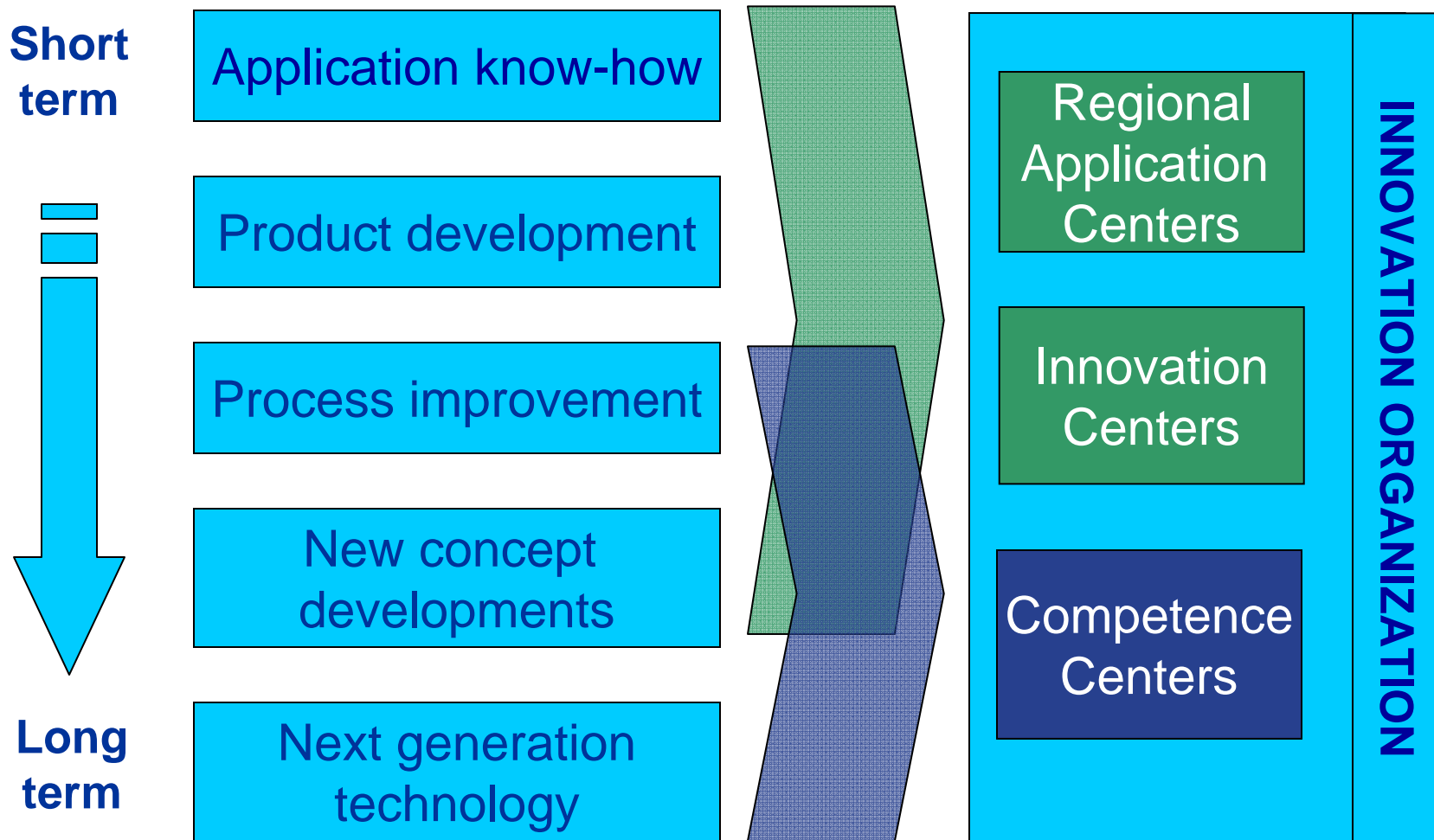




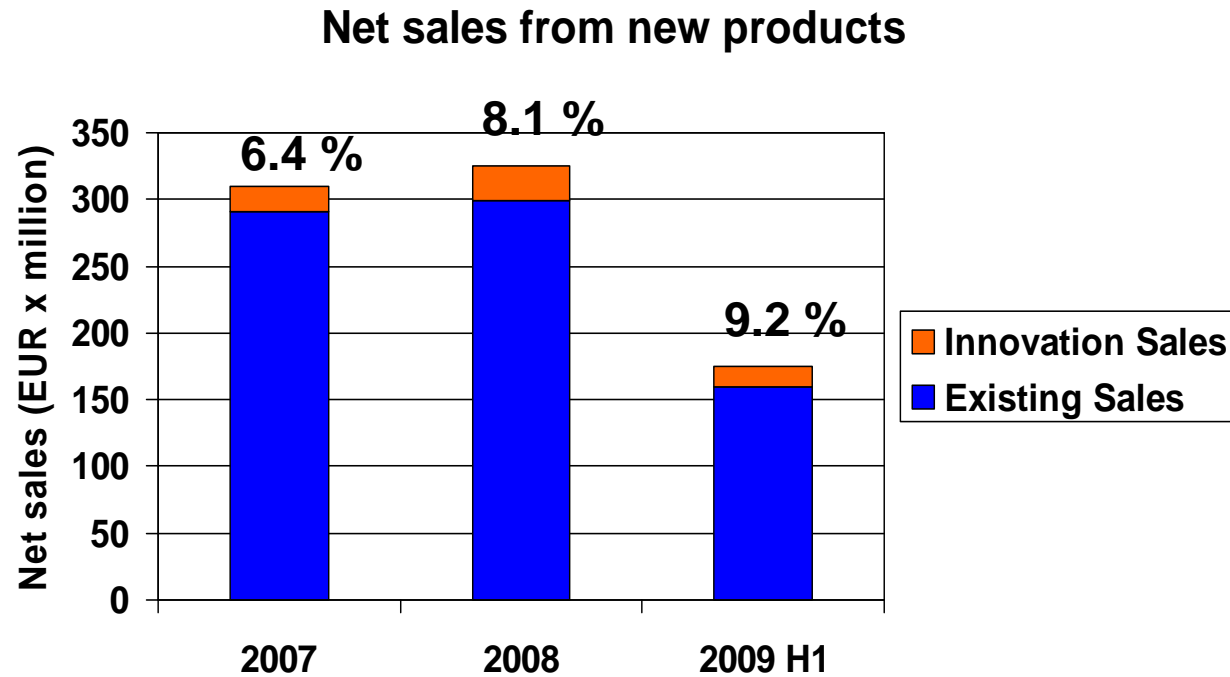
# Innovation



# Innovation effort and organization



# Innovation contribution to net sales

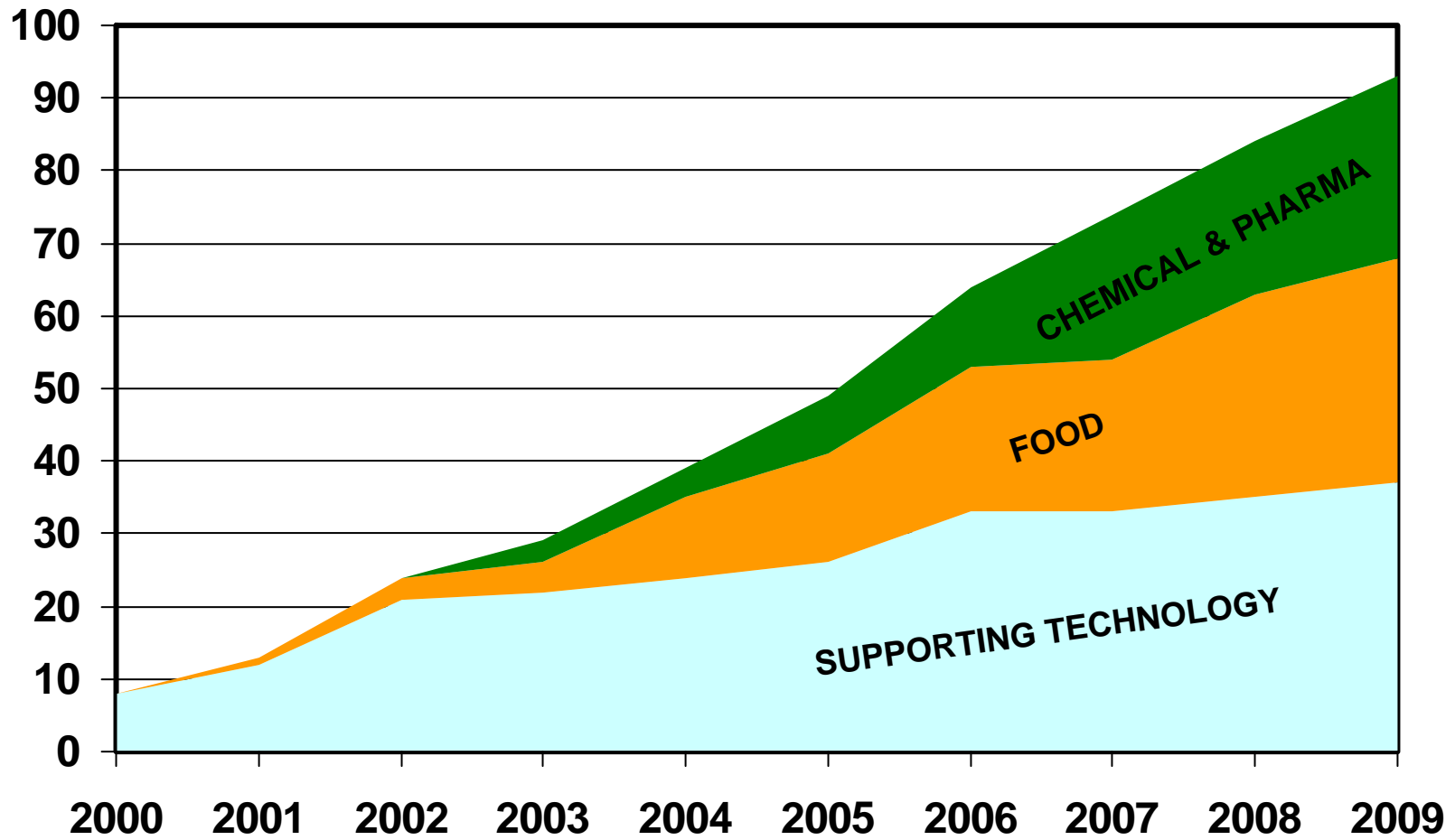


- Net sales from new products and new applications:
  - 2007: 10.7 %
  - 2008: 12.6 %
  - 2009: 13.8%
- Cost of innovation: 3% on Sales

## **Longer term innovations: significant potential with increased investments to build future results**

- PURAC is committed to making our initiatives in green chemicals (incl. PLA) and preservation successful.
- These two initiatives are the main topics in our innovation program
- Specifically, our PLA project consumes a large part of our investments in innovation, business developments and supply chain initiatives. As for any long term initiatives, investments will bring returns in the future, with costs carried in the present.
  - Our investment today in Spain on D(-) Lactic Acid and Lactide and our future investments in Thailand are within this perspective
  - The annual costs related to the PLA initiative in 2009 are approx. 10 mil €

# PURAC trend in patent positions per area



# Some important patent positions

- Food
  - Killing food pathogens
  - Prevent acrylamide formation
- Chemical & Pharma
  - Sustainable intermediates for bioplastics
  - Creating green solvents for agricultural use



Natural preservatives to replace nitrite



Calcium formula to prevent acrylamide



Lactides for PLA to produce biodegradable plastics



Lactates as solvent for environmental friendly pesticides



These examples represent the concept and do not necessarily imply the presence of PURAC ingredients inside the product shown



# Food Preservation



# Preservation is a major trend in the food market

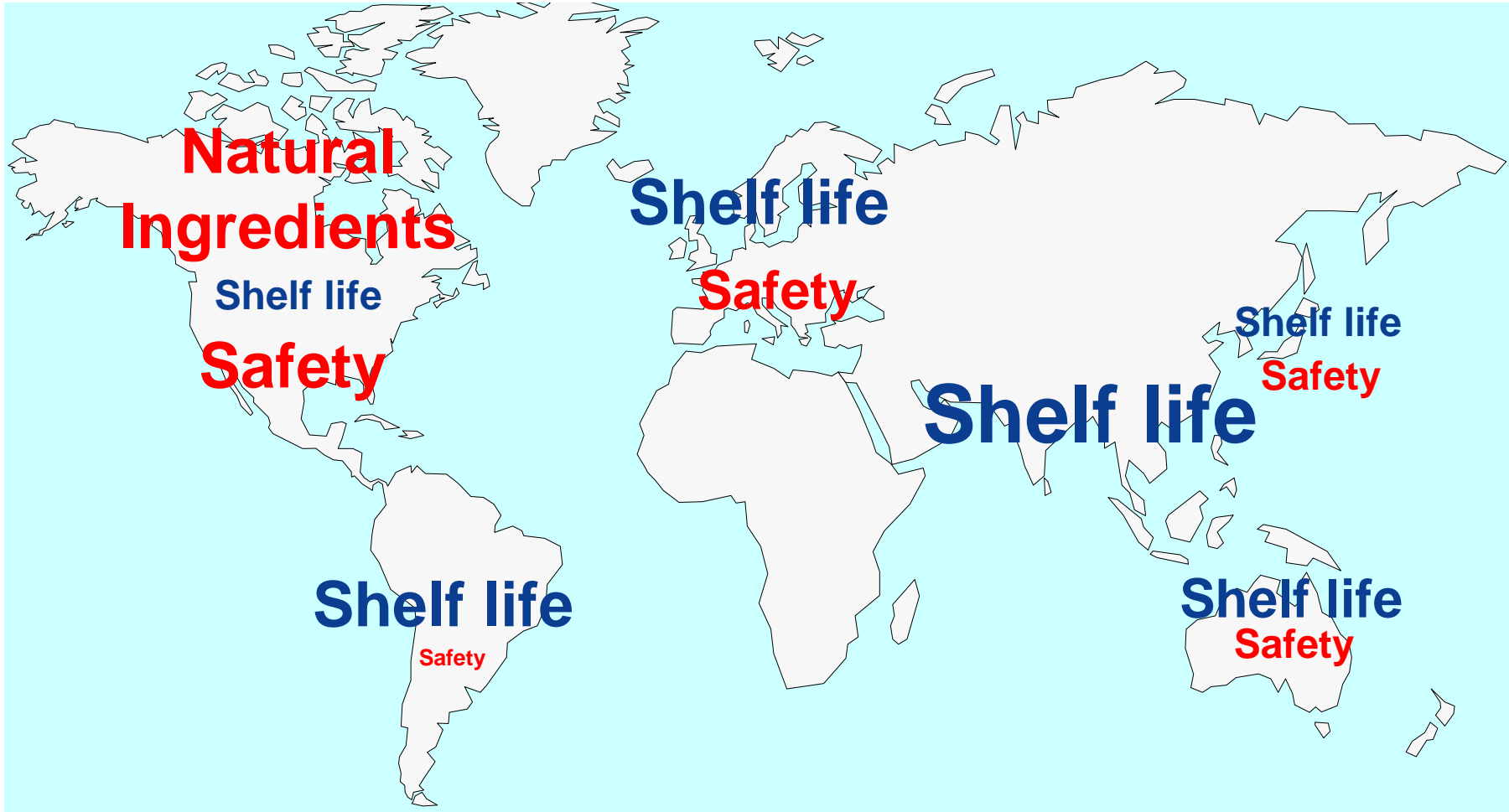
- Safe product
  - Prevent people from getting sick
  - Governments assure population's health by regulations
  - Protect customers' brand equity
- Shelf life
  - The time that the food product can be consumed/sold
  - The time that the product does not appear to be spoiled (keep a fresher appearance)
  - Improve customers' supply chain costs and reduce inventories write-offs
- Natural & healthy ingredients / solutions
  - Replace traditional ingredients by natural ingredients and solutions
  - Strong focus on less ingredients on consumer product label
  - Added value proposition for the Industry



**Natural preservation solutions**



# Growth drivers food market



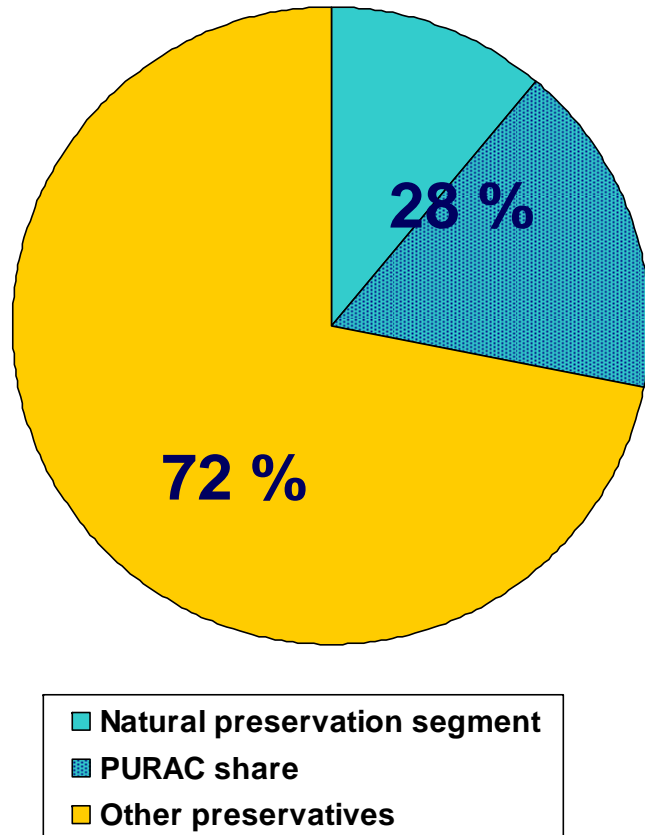
*It's all about preservation*

# PURAC's strength in natural preservation solutions

- Strong microbiology knowledge:
  - Fermentation technology
  - Preservation
- Production
  - Lactic Acid is an antimicrobial that is produced in our fermentations
  - New antimicrobial solutions will be made through fermentation
- Marketing
  - Strong presence in some main segments of the food market (beverages, refrigerated foods, bakery & dairy)
  - We use our current market access to the food industry to further penetrate the market with antimicrobial solutions



# Market Development Food Preservatives



- Total market size in 2008: € 780 million\*
- The market of preservatives will continue to grow
- The “natural segment” will outgrow the total market
- PURAC is well positioned in this segment to benefit from these positive market trends

# Natural preservatives: examples of target applications & target ingredients



**Meat products**



**Prepared foods**



**Dressings**



**Beverages**

**Target ingredients:**

**Benzoates  
Sorbates  
Propionates  
Nitrites**



These examples represent the concept and do not necessary imply the presence of PURAC ingredients inside the product shown

# Label friendly



- Consumer claim:  
No artificial preservatives
- Lactic Acid based ingredient is used to replace artificial preservatives
  - In combination with other natural antimicrobials
- Replacing chemical preservatives is opportune in most developed parts of the world (N-America, Europe)

# Safety and convenience

- Convenient packaging:  
Product opens and closes often
- Preservation is needed to assure freshness and safety
- Lactic Acid based ingredients are used, often in combination with other antimicrobials
- Convenience is a trend that is expected to stay in the developed part of the world



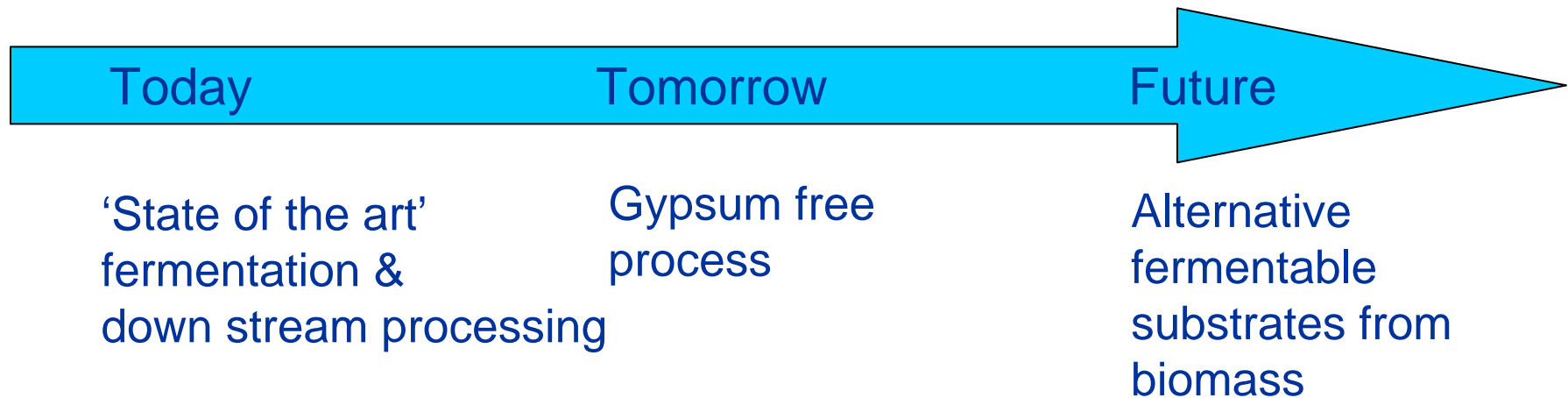


# Sustainability

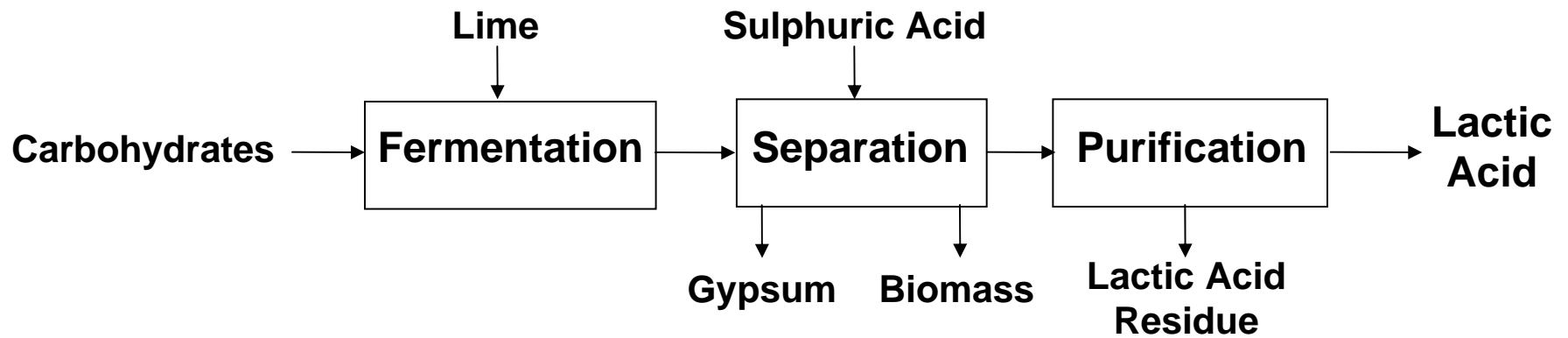


# Innovation improves the Lactic Acid process

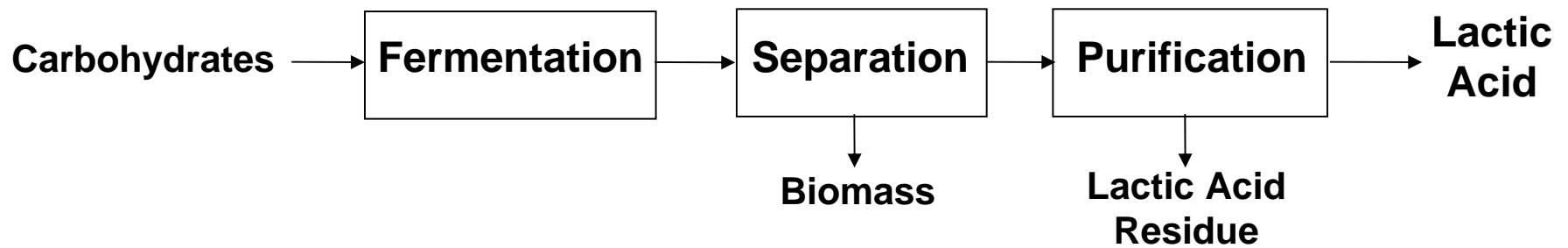
- Sustainability is key in green chemicals and bioplastics:
  - CO<sub>2</sub> reduction
  - Longer term: use of alternative substrates ('Food for Fuel')
- PURAC is on track in developing a new efficient Lactic Acid process which significantly improves the CO<sub>2</sub> footprint
  - Gypsum free Lactic Acid manufacturing (pilot plant running)



# Lactic Acid production



# Lactic Acid production



# PLA has the potential to become a carbon sink

