



Towards Excellence in Innovation at DSM

The Life Sciences and Materials Sciences Company
contributing to Quality of Life



Rob van Leen, Chief Innovation Officer

DPI, Maastricht, 22 November 2007



Unlimited. DSM



> 105 Years of successful transformation

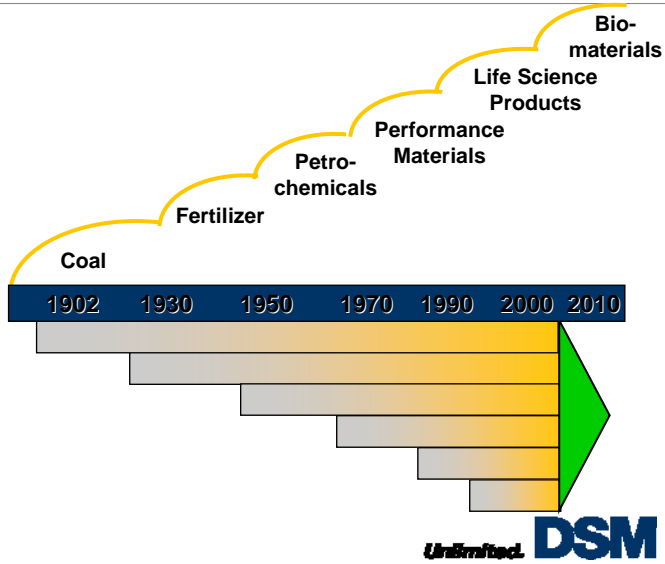


Evolution



Technological Competencies

- Mechanical technology
- Chemical technology
- Polymer technology
- Material sciences
- Fine chemistry
- Biotechnology



The DSM Business Card



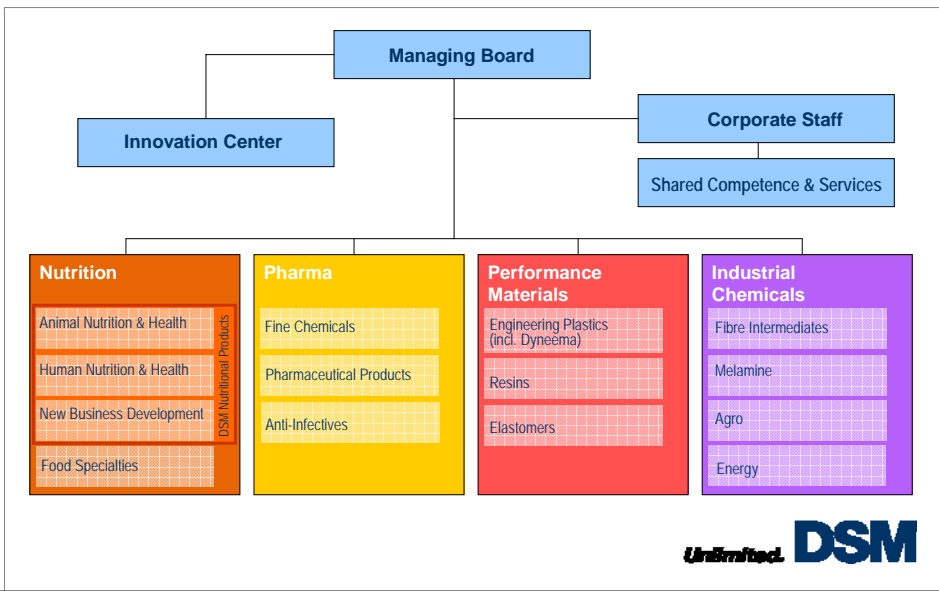
- Global top of chemical industry
- Shift to life sciences
- Net sales 2006: €8.4 bn
- EBIT 2006: €835 mln
- 75% of businesses among the global leaders
- 22,000 employees
- 250 locations on 5 continents



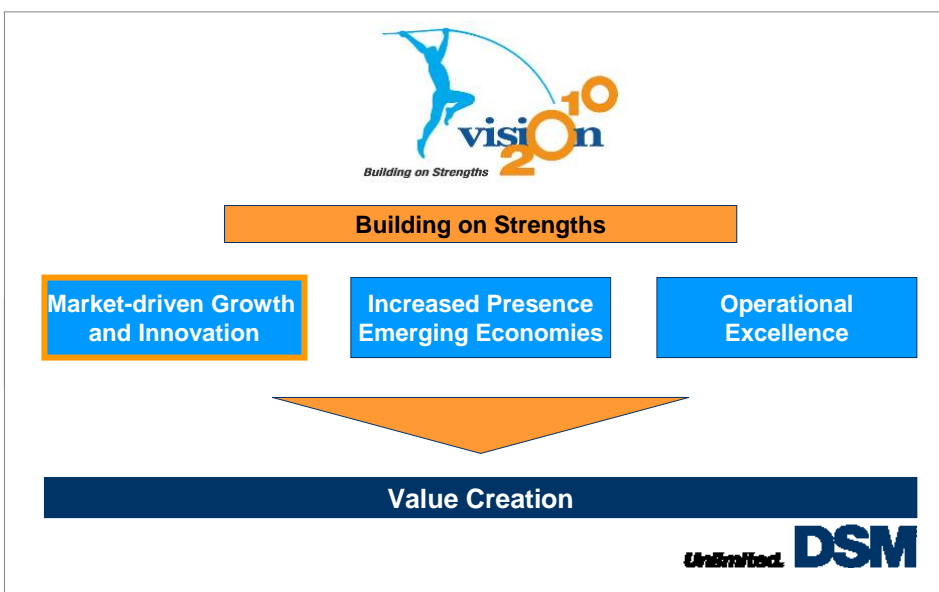
World Business Council for Sustainable Development



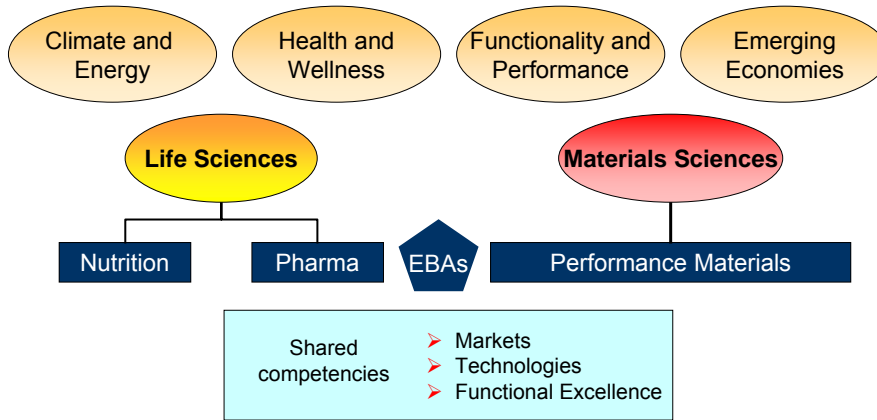
DSM Activities - Clusters



Vision 2010: Building on Strengths



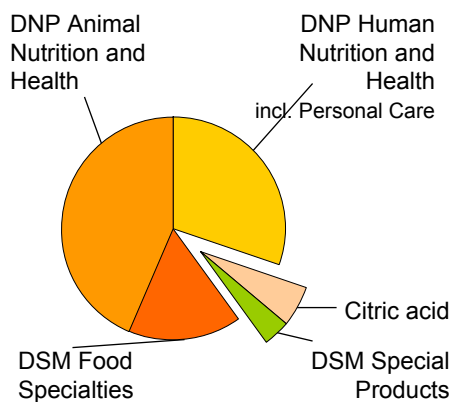
Accelerating Vision 2010



Exploiting strong market positions and technology platforms



DSM Nutrition



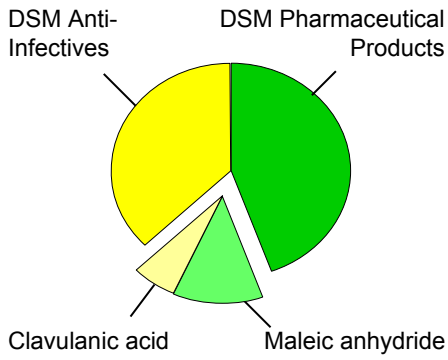
2006 sales ~ € 2.4 bn

Drivers

- Better nutrition to stay healthy
- Increased convenience foods
- Innovation to protect brands
- Food chain productivity and safety



DSM Pharma



2006 sales ~ € 0.9 bn

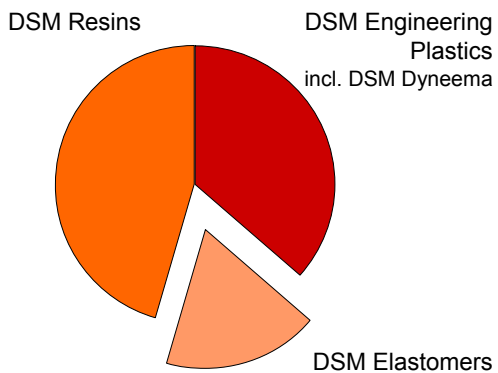
Trends

- Aging demographics
- Emergence of generics
- Growth of biopharma



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DSM Performance Materials



2006 sales ~ € 2.8 bn

Diverse end-markets

- Electrics & Electronics
- Transportation
- Building & Construction
- Paint & Coatings
- Packaging
- Safety & Protection



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Vision 2010: Building on Strengths



Building on Strengths

Market-driven Growth and Innovation

Increased Presence Emerging Economies

Operational Excellence

Value Creation

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Vision 2010: Innovation Boost



Innovation Boost

- Stronger business-driven innovation (incl. mindset)
- Up to € 1 billion additional sales by 2010
- Building mid- to long-term new business via EBAs
- Improved Innovation practices

Input

- Building on excellent R&D & innovation capabilities
- € 30 → € 70 mln additional annual budget for selected innovation programs
- 15% of Capex → NBD
- ~ 250 FTE extra
- 11 Accelerated Growth Areas
- 4 Emerging Business Areas



Leading to an
Intrinsically Innovative Company

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Global Trends as Basis for Innovation



Societal trends

- Individualization
- Global networking
- Age and population growth
- Health, environmental and safety awareness

Technology trends

- Biotechnology
- Nanotechnology
- Information technology
- Process technology



Health & Wellness



Climate & Energy



Functionality & Performance



Intensify Existing Innovation Programs



Nutrition/Health

Food	Feed	Health
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- Fitness & Wellness
- Metabolic syndrome
- Cognitive function

- Eubiotics
- Improved feed conversion
- End product quality

- PER.C6 human cell line
- Generic APIs

Performance Materials

Resins	Eng.materials
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- Eco-friendly coatings
- Functional coatings

- High Performance Materials e.g. Stanyl Excel

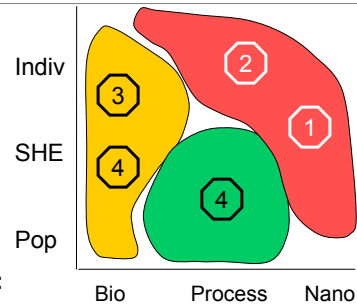
Intensify 'open innovation' via partnering, venturing, & NBD



Start up Emerging Business Areas



- ① Biomedical Materials
- ② Specialty Packaging
- ③ Personalized Nutrition
- ④ White Biotech (incl. Enzymes)



Characteristics of Emerging Business Areas:

- Field driven by global mega and technology trends
- Within the Corporate portfolio priorities
- Building upon DSM capabilities (business, markets, technical)
- Potential to generate multiple business opportunities
- Potential for real impact on DSM profile



Emerging Business Areas beyond 2010



1. Biomedical Materials

- Focus on:
 - Coatings & Implants
 - Drug device combinations
 - Regenerative medicine



2. Specialty Packaging

- Focus on:
 - Food packaging (freshness)
 - Pharma (compliance)
 - Smart packaging



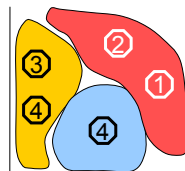
3. Personalized Nutrition

- Focus on:
 - Assessment/advice/feedback
 - Weight management
 - Hypertension

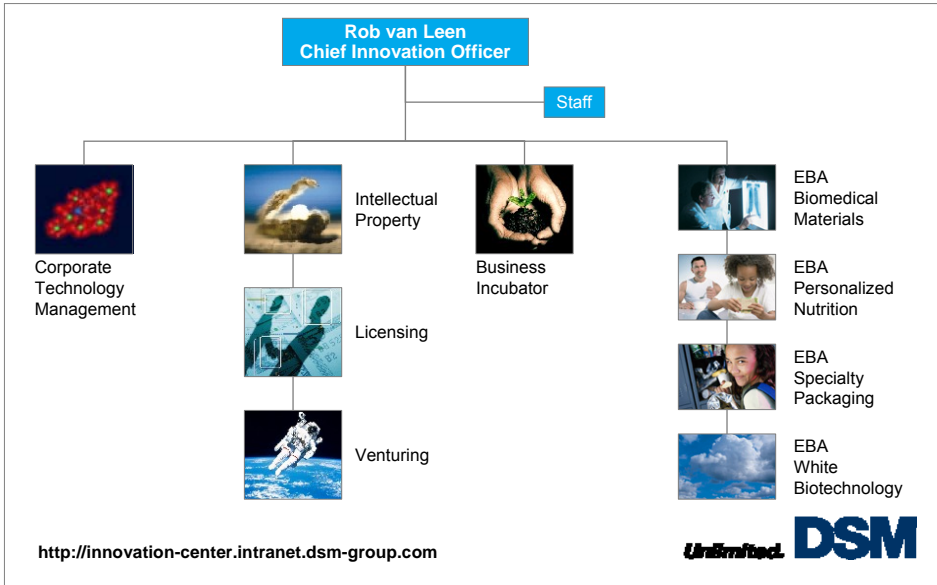


4. White Biotech

- Focus on:
 - BioFuels
 - Bio-based chemicals
 - Enzymes & yeasts



The DSM Innovation Center

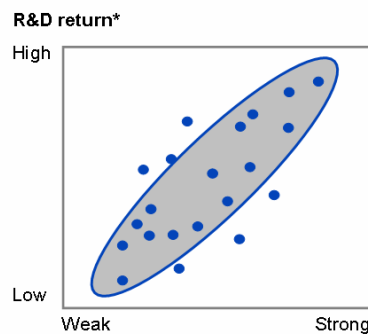


Strong innovation practices generate high return



Managing innovation with good practices makes a difference

Impact



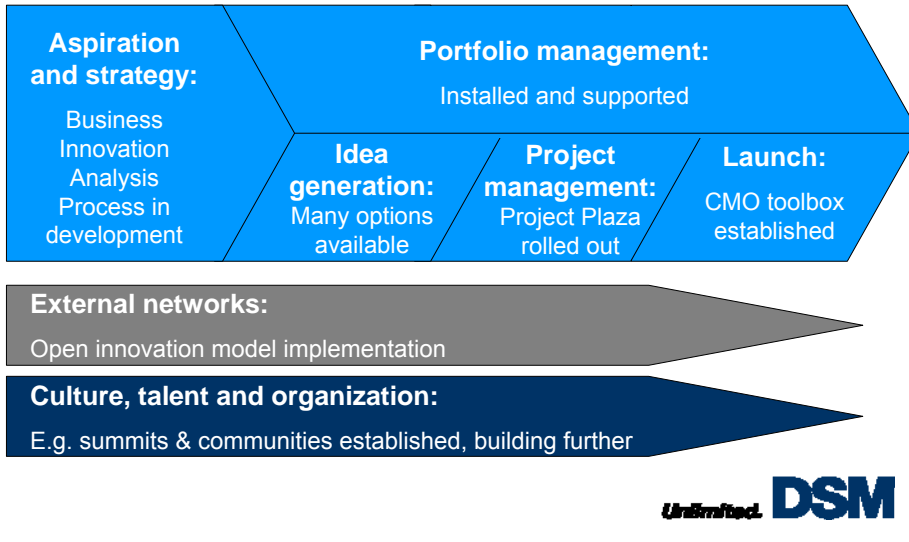
Innovation practices



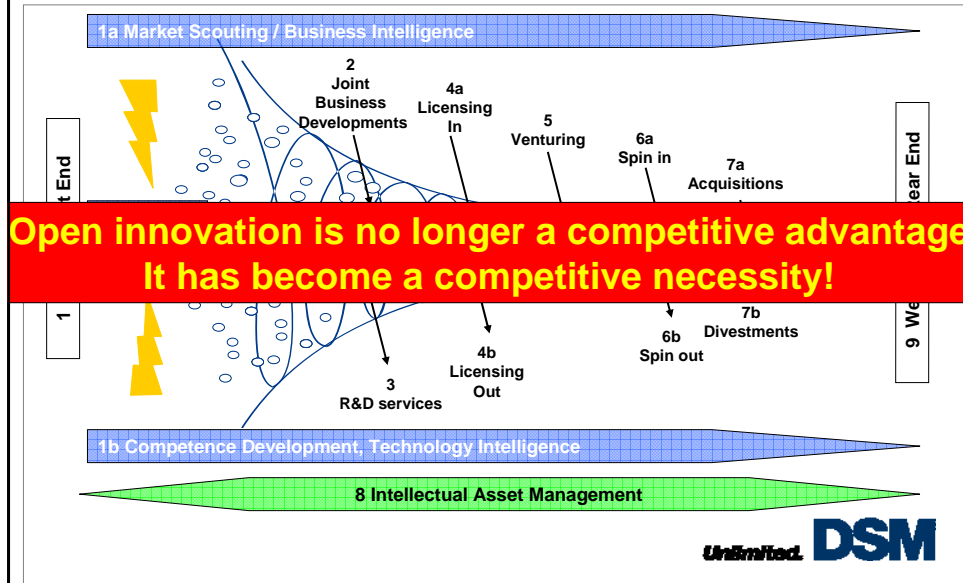
- 1 Strategy/focus in line with headroom
- 2 Strong innovation engine from idea generation to launch
- 3 Breaking orthodoxies that limit innovation headroom

* 5-year track record normalized to R&D spend and sales (index)
 ** Benchmarking results based on survey with approx. 100 assessment questions
 Source: McKinsey

Status Example Practices on Innovation



Value Creation by Open Innovation



Fabules: Venturing -> Licensing -> Acquisition



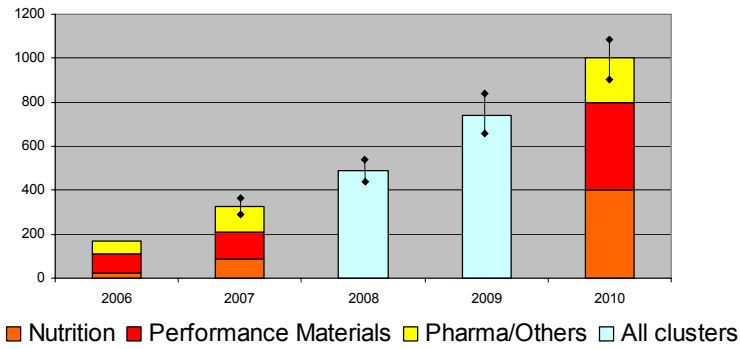
Current Active Portfolio DSM Venturing



Innovation Sales Growth until 2010



Innovation Sales Growth per Cluster



Target Vision 2010: innovation sales of €1 billion



Output 2006: Building Blocks towards €1bn



Astonishing Stanyl®

for LED dies, connectors and joystick housings

ARNITEL® C

for heat stable cables

Dyneema®

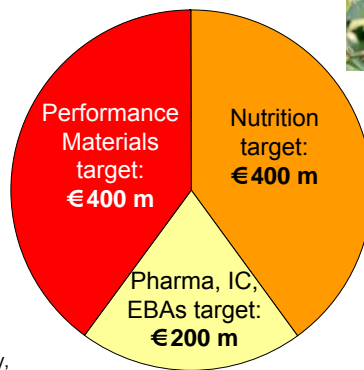
for air cargo safety nets



NeoPac® E-160 for furniture wood coatings



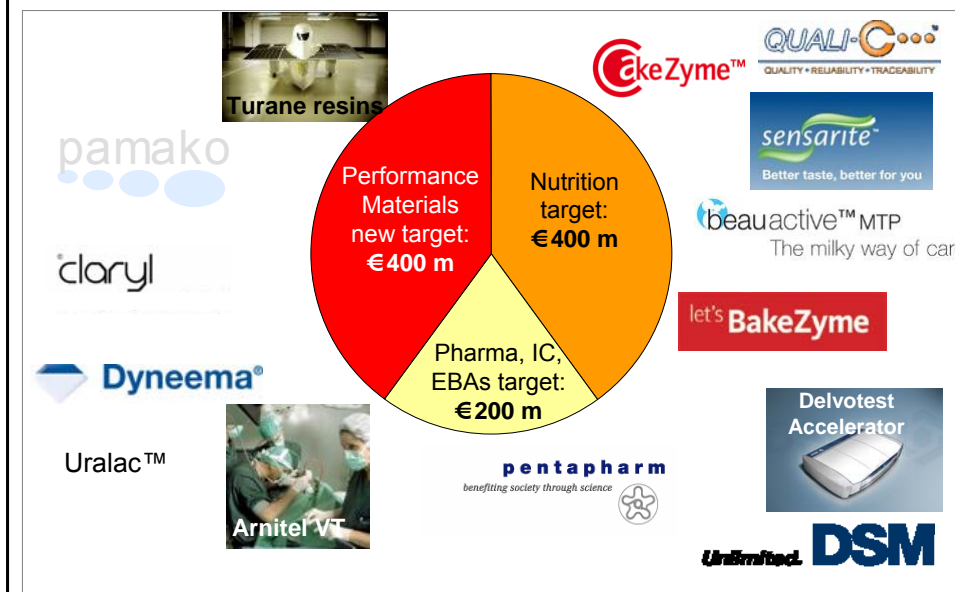
NeoCryl® A-2090 family, food contact compliant resins



Fitness & Wellness
Metabolic syndrome



2007 Building Blocks towards €1 bn



Daron® turane: Less Weight & Better Strength



Daron® turane: an new DSM family of thermoset urethanes

- More strength at less weight
- Superior processing characteristics
- For body parts of cars, windmill blades, construction elements, etc.

Nuna4 solar powered vehicle

Winner World Solar Challenge
Australia, October 2007



Less & Better with Dyneema®



➤ Less

- 7x lighter than steel for equal lifting capacity
- Minimizes damage to load
- Avoids transport by crane (12kg vs 100kg steel wire slings)

➤ Better

- Easier and more precise lifting
- Much safer for operators
- More durable

Heavy duty lifting slings



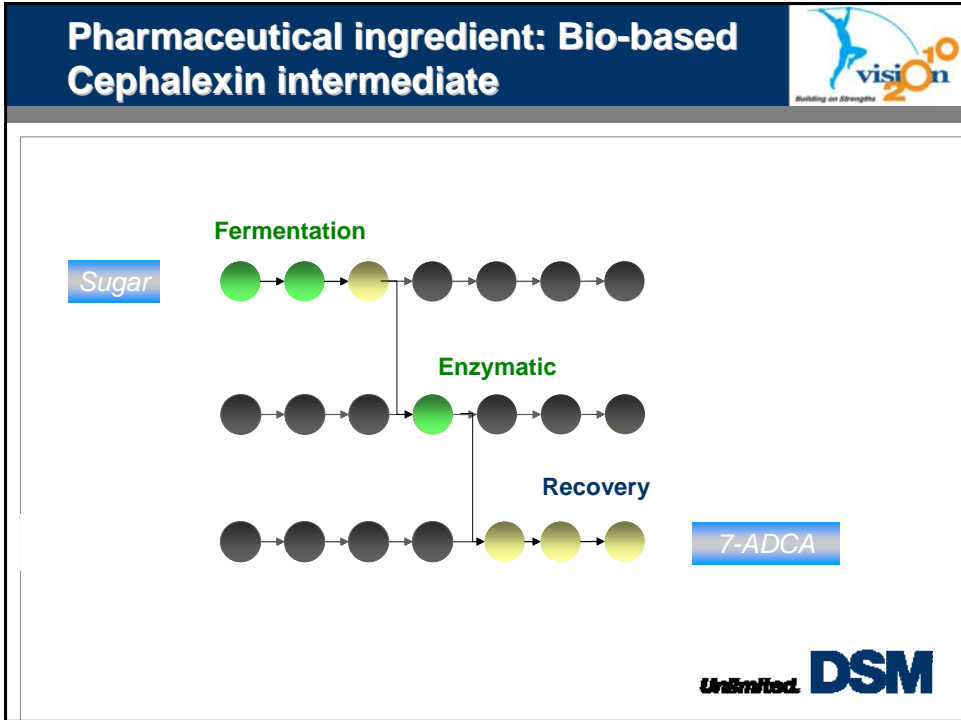
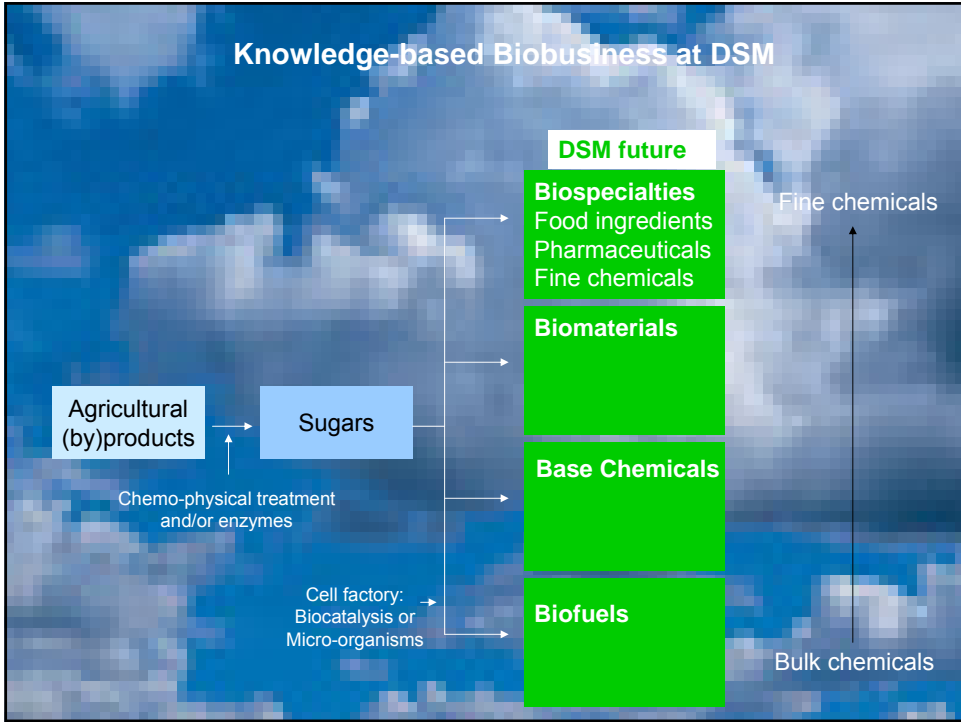
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DSM and the knowledge-based bio-economy



White Biotechnology delivers products and energy

Economy and Ecology go hand in hand



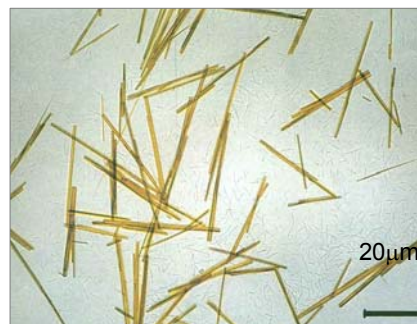
2005: 50% capacity increase



Nutritional Ingredient: Bio-based Vitamin B2

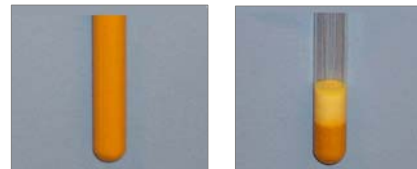


Vitamin B2
(riboflavin)



Improvements w.r.t. chemical process

- 12 raw materials replaced by **sugar**
- 7 solvents replaced by **water**
- **Waste reduction** of over 75%
- **Cost reduction** of over 20%



Unified **DSM**

New Processing Aid: Brewers Clarex



Brewers Clarex™

Novel enzyme for the cost-effective prevention of haze formation in beer

40% less haze compared to commonly used chemical clarifying agent (PVPP)
➤ No negative effect on foam and taste

I.F.B.M.

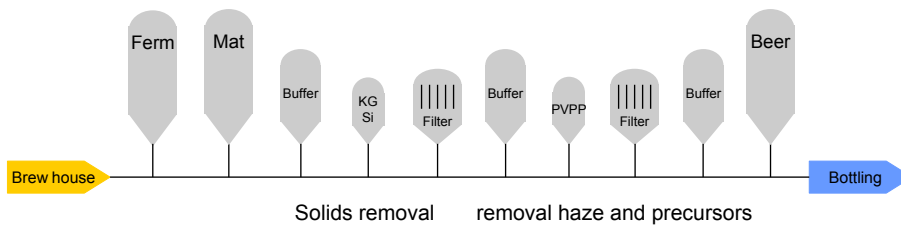


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Current lay-out of the Brewery



- Many batch operations
- Many powders used
- Risk of oxygen uptake

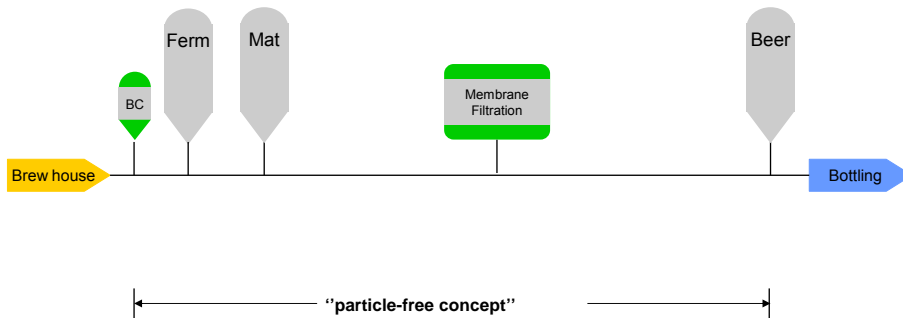


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With Brewers Clarex



- New vision for brewing industry



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Nutritional ingredient: Preventase



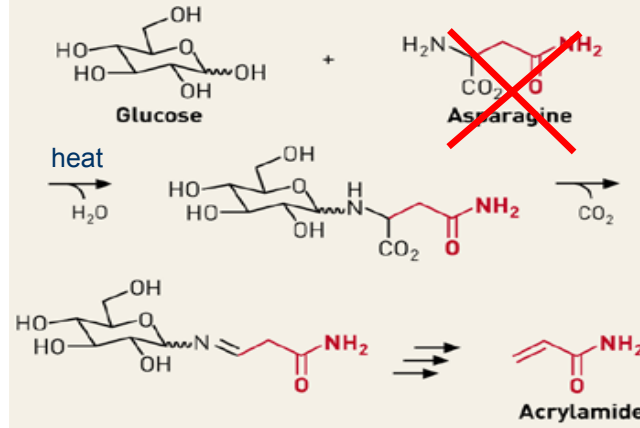
PreventASe™
The answer to Acrylamide

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White biotech innovation in Nutrition



Preventing acrylamide formation by converting asparagine in aspartate



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Leader in Sustainability, Now & in the Future



People, Planet, Profit



Climate & Environment

Continuous improvement

Nutrition Improvement

Well on track

Internationalization & Diversity

Step up efforts

FTSE4Good

DSM Values: "We can't be successful in a world that fails"

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We are on our way towards excellence in innovation



Unlimited. DSM

**The Life Sciences and Materials Sciences Company
contributing to Quality of Life**



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