Raising the bar at the Front End
Filling the innovation pipeline at three levels: platforms, ventures and projects

Jorge Fernandes
VP Innovation Program Office
DSM Innovation Center

Munich, February 4th, 2014
Building an intrinsically innovative company

20%  
Innovation Sales 2015

@ ~5% higher Gross Margins

Top Quartile  
McKinsey Innovation Benchmark 2012

€1B  
Disruptive Platforms, 2020
Sustainable Innovation and R&D Themes

Sustainable Manufacturing / Raw Materials

Towards a 9 billion society in 2050

Food & Nutrition Security

Energy

Health

Confidential

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Value Creation by Open Innovation

Open innovation is no longer a competitive advantage. It has become a competitive necessity!

Market Scouting, Business Intelligence

- Supplier driven innovation
- Public, Private Partnerships
- ODI
- Crowdsourcing

Interaction / Synthesis

Joint Business Developments

Licensing In

Venturing

Spin in

Acquisitions, Alliances / JVs

Spin out/off

R&D services (Chemelot)

Licensing Out

Divestments

Competence Development, Technology Intelligence

Intellectual Asset Management

Crowdsourcing
The first natural, scientifically substantiated solution for healthy blood flow

EFSA (proprietary) health claim:

“Fruitflow® helps maintain normal platelet aggregation, which contributes to healthy blood flow”

FiSA 2012: Fruitflow® one of the most innovative products of the year
Managing the portfolio across levels

- Improved Product
- Product new to DSM
- Market new to DSM “Adjacent Business”
- New to The World

**Disruptiveness: Newness of Market to DSM / the World**

Legend:
- Project
- Platform

- Established Products and Business Lines (Projects 1,2,3,...)
- New Applications and Adjacencies (Projects 4,5,6,...)
- New Platforms (Ventures & Projects 7,8,9,...)
- Break-Away (Ventures & Projects)

- Market life cycle:
  - Emerging
  - Growth
  - Mature
  - Decline

- 1 - 1.5 yr
- 1.5 - 3 yr
- 3 - 5 yr
- 5 - 9 yr
Accelerating and supporting innovation

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New Business Development

- EBA Biomedical
- EBA Bio-based Products & Services
- EBA Advanced Surfaces
- Business Incubator

Enablers / Accelerators

- Excellence in Innovation
- CTO Office
- Licensing
- Venturing
Three exciting growth platforms established

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<tr>
<th>DSM Biomedical</th>
<th>Innovative materials that enable more advanced clinical procedures and improved patient outcomes</th>
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**DSM Bio-based products & Services**

- Advanced Enzymes and Yeast platforms: enabling Advanced Bio-Energy and Bio-based chemicals

**DSM Advanced Surfaces**

- Smart coatings and surface technologies to boost performance in the solar industry
DSM Biomedical
Biomaterials history at DSM

- **2000**: Start of DSM Dyneema’s Medical R&D Efforts
- **2002**: Medical Coatings R&D efforts started in DSM Desotech
- **2004**: Official launch of Dyneema Purity® orthopedic sutures
- **2006**: First sales of Dyneema Purity® fiber for knee ligament fixation
- **2008**: Biomedical EBA launched
- **2010**: Medivas technology acquisition for Drug Delivery
- **2012**: Kensey Nash Acquisition

**Timeline Events**

- **1989**: PTG Acquisition (est. 1989)
- **1990**: First cardiovascular and ophthalmic drug delivery development agreements
- **2000**: First sales of Dyneema Purity® fiber in cardiovascular and spinal applications
- **2004**: Expanded portfolio for ophthalmic applications
- **2006**: DSM targets EBA sales in 2020 > €1bn
- **2008**: Antimicrobial Coatings
- **2009**: Actamax DSM-DuPont JV
- **2010**: Expanded portfolio for ophthalmic applications
- **2012**: Kensey Nash Acquisition

**Highlighted Dates**

- **2000**: Start of DSM Dyneema’s Medical R&D Efforts
- **2002**: Medical Coatings R&D efforts started in DSM Desotech
- **2004**: Official launch of Dyneema Purity® orthopedic sutures
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**Other Information**

- **2000**: PTG Acquisition (est. 1989)
- **2001**: First cardiovascular and ophthalmic drug delivery development agreements
- **2002**: First sales of Dyneema Purity® fiber in cardiovascular and spinal applications
- **2004**: Expanded portfolio for ophthalmic applications
- **2006**: DSM targets EBA sales in 2020 > €1bn

**Key Acquisitions**

- **2000**: PTG Acquisition (est. 1989)
- **2006**: Medivas technology acquisition for Drug Delivery
- **2012**: Kensey Nash Acquisition

**Important Activities**

- **2000**: Start of DSM Dyneema’s Medical R&D Efforts
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- **2004**: Official launch of Dyneema Purity® orthopedic sutures
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**Notable Events**

- **2000**: Start of DSM Dyneema’s Medical R&D Efforts
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Open Innovation in biomedical materials

Scientific Advisory Board & other Consultants

Device design; Exclusive material developments
A world class portfolio of biomedical materials

Silicone hydrogels
Biomedical polyurethanes
UHMWPE biomaterials
Drug delivery
Coatings

Natural Materials
Mechanical Devices
ECMs
Polymers & Metals
Bio Commercialization

DSM
BRIGHT SCIENCE. BRIGHTER LIVING.
Sustainable Innovation Themes → a Sustainable Company

- People
  - Health
- Planet
  - Energy Security
- Profit
  - Food & Nutrition Security
  - Sustainable Manufacturing / Raw Materials
Thank You