



Let's make it work! Sustainable research

Dr. Peter Nagler
December 4, 2013

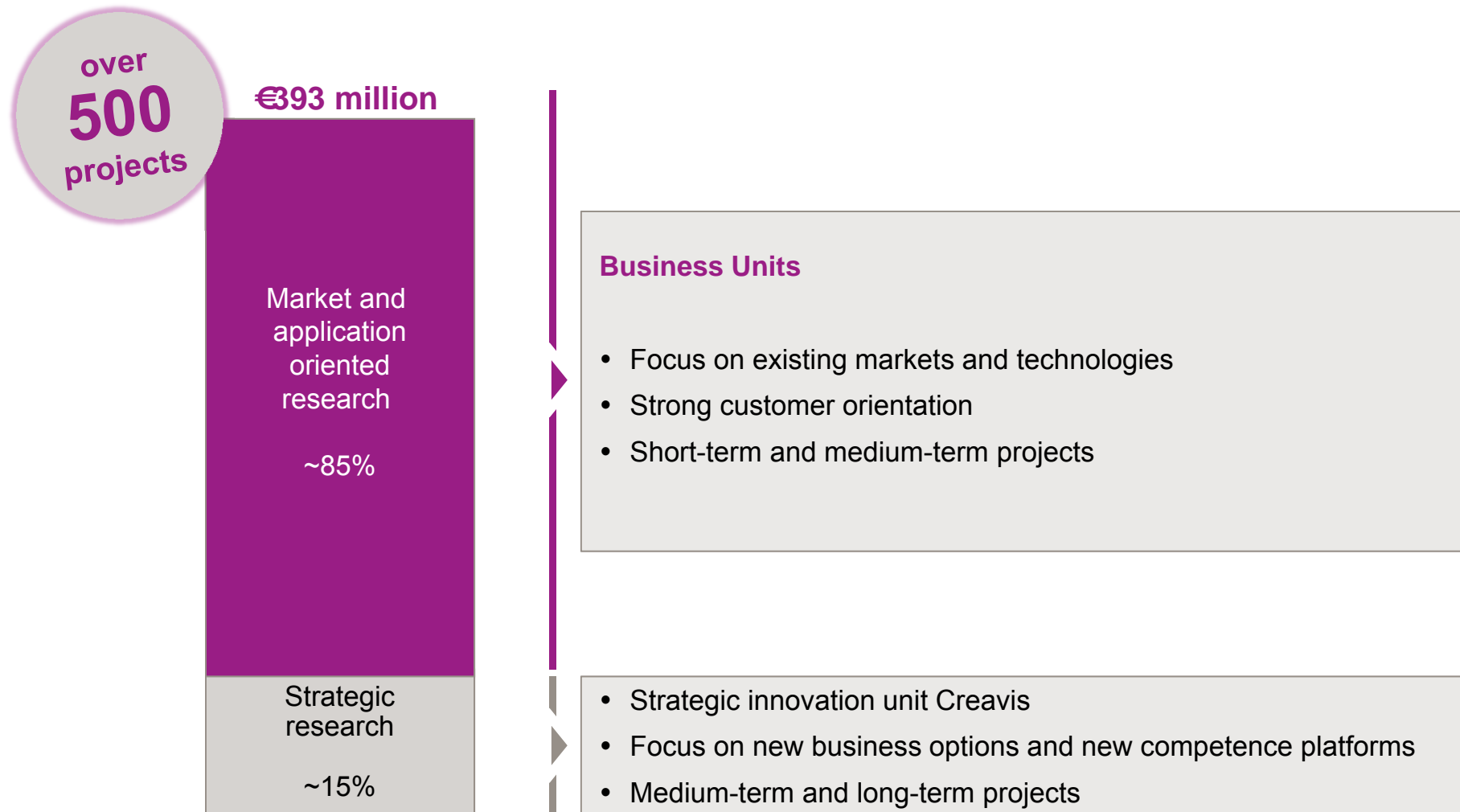


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Structural approach for well stocked innovation pipeline



R&D expenses 2012



Creavis: A success story



Powerful:

- 25% of all long-term Evonik projects with a high potential, but also with a high risk, originate from Creavis

Networked:

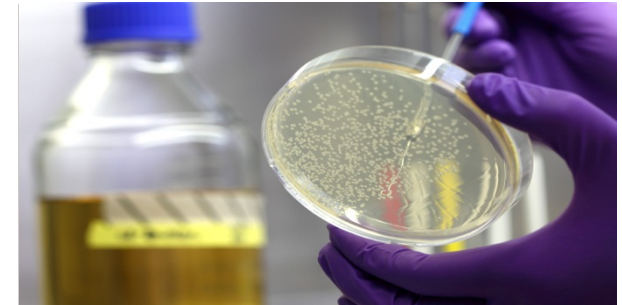
- So far, Creavis has collaborated with partners on 45 publicly funded projects

Successful:

- In the last three years, 20 innovations projects were transferred to the Business Units and new business was initiated (e.g. Membrane)

Sustainable:

- The Life Cycle Management Team established at Creavis, works on 20-30 projects per year (Evonik Carbon Footprint, Life Cycle Assessments)



Creavis 3.0: More clout for shorter innovation cycles



Reorganization as of January 1, 2014

Faster:

- Generation of ideas

More flexible:

- Start of new research projects

More dynamic:

- Creation of new business options for the operational units

More comprehensive:

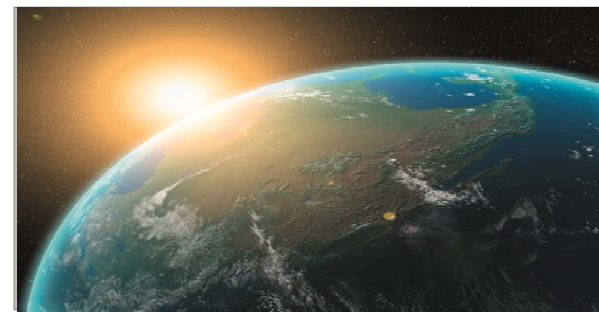
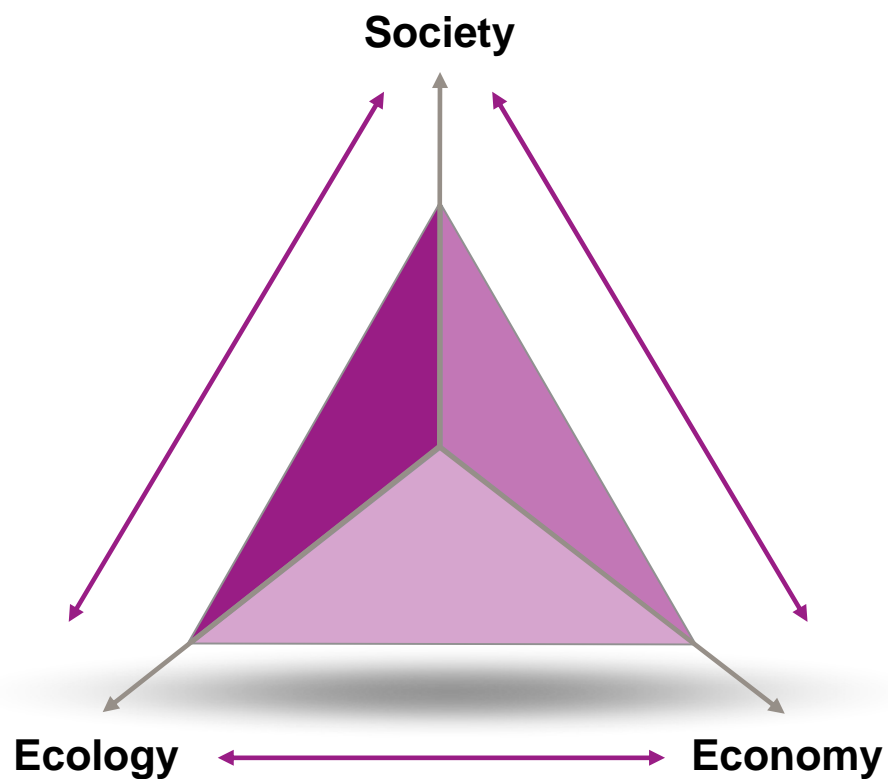
- Development of new technology expertise



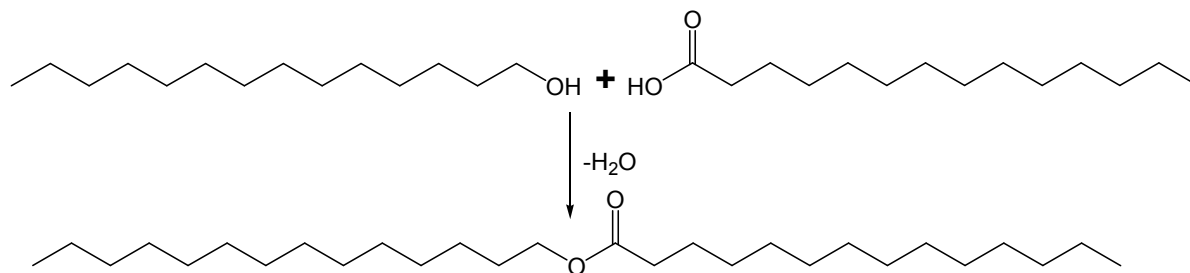
Sustainability creates added value



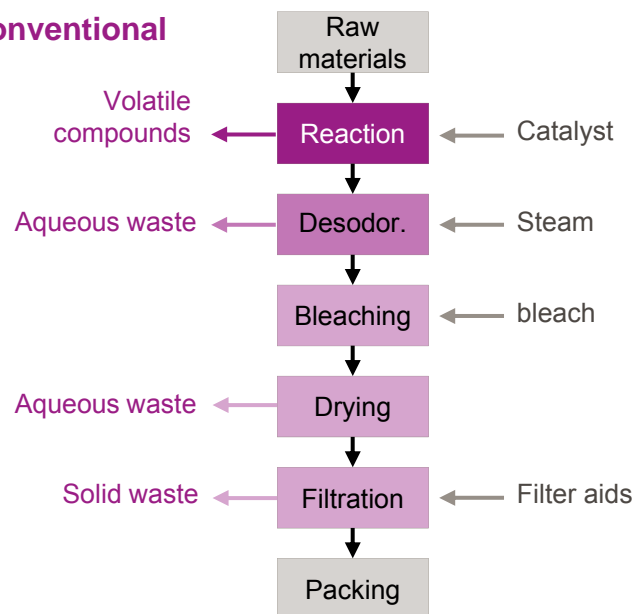
Balance between all aspects of sustainability



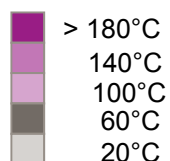
Sustainability that goes under the skin: Myristyl myristate for cosmetics



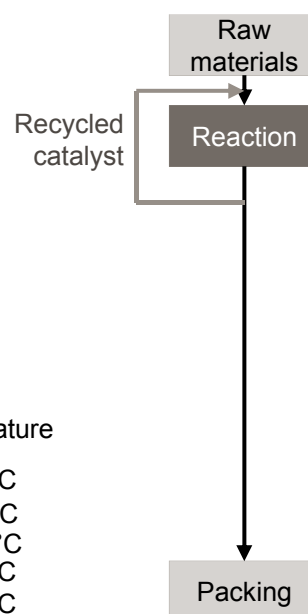
Conventional



Applied temperature



Enzymatic



- Less steps
- Lower temperatures
- Less energy
- Less waste
- More resource efficiency

Biotechnology: Evonik covers the entire process chain



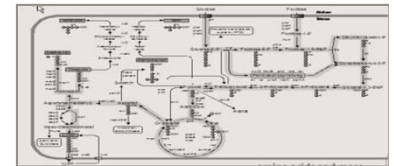
Renewables sourcing

- Feedstock availability
- Geographical scenarios



Metabolic Engineering

- Design of metabolic routes
- Evaluation of microbial strains



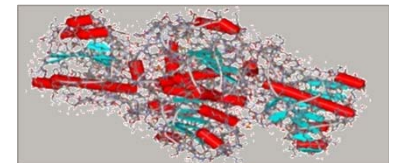
Fermentation

- Process optimization, strain characterization, scale-up, operational excellence



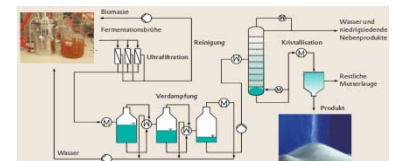
Biocatalysis

- Identification, design and characterization of highly efficient enzymes and whole cell catalysts

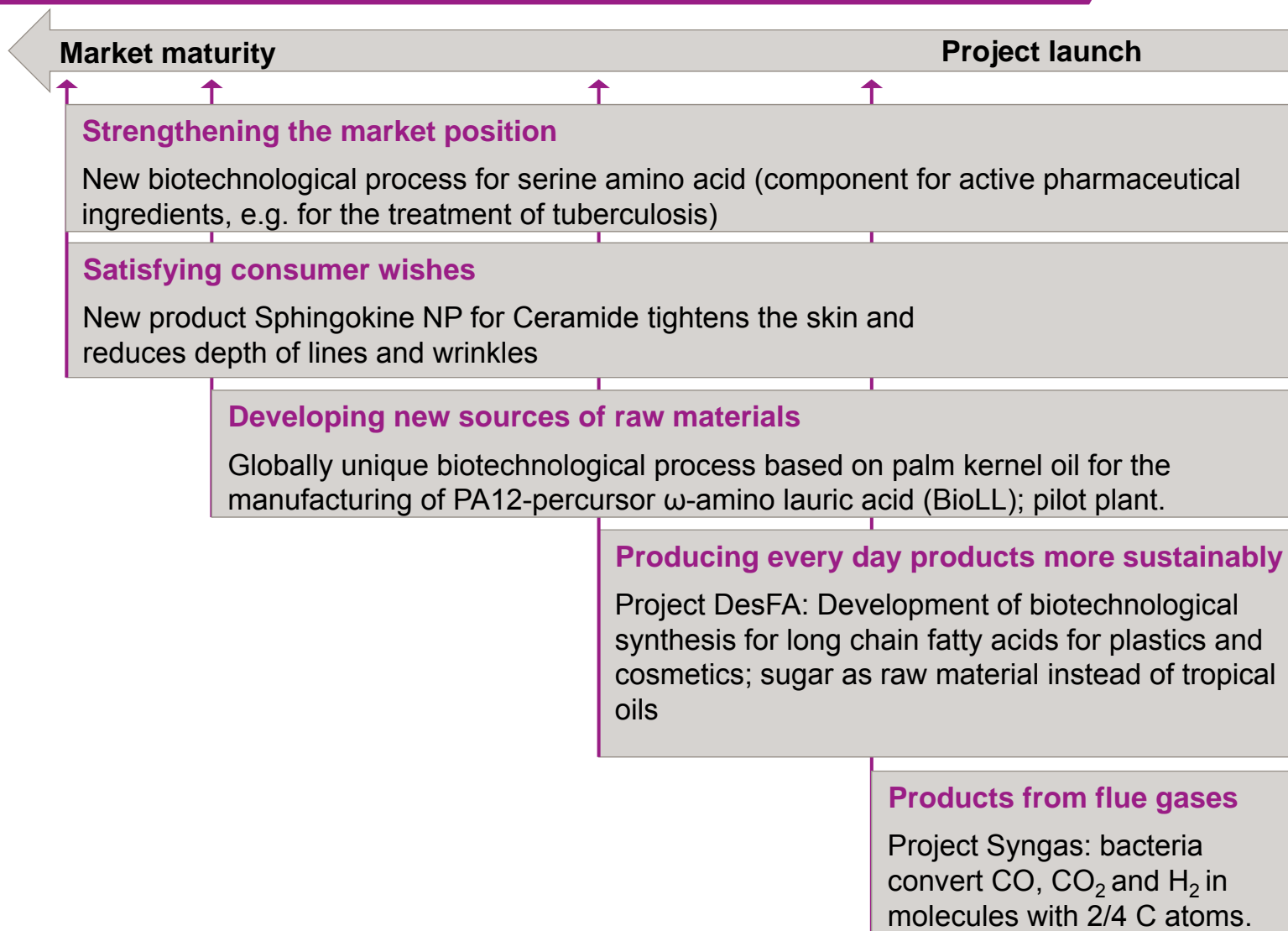


Down stream processing

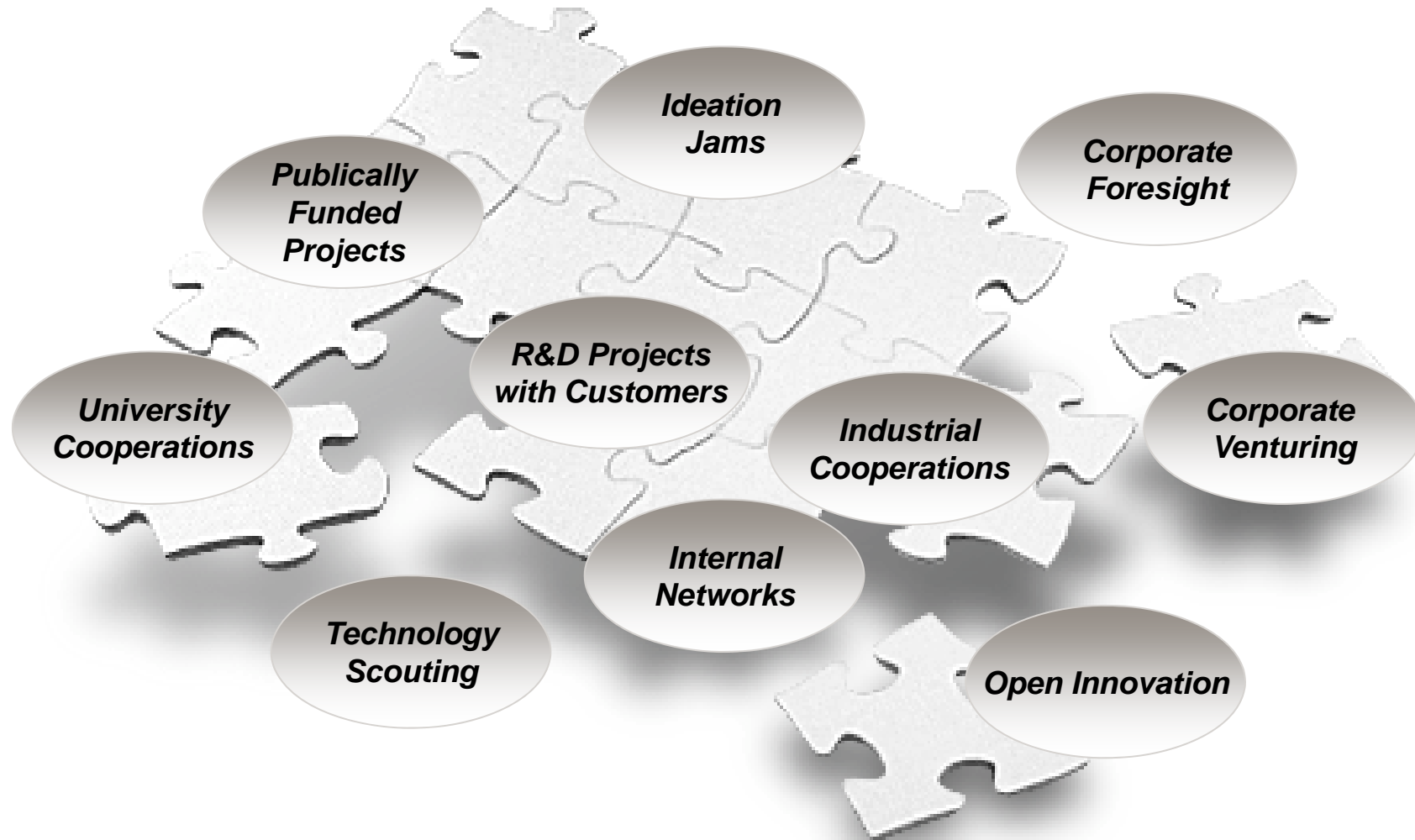
- Recycling of cells and by-products
- Product isolation and purification



Competence network biotechnology: Current examples



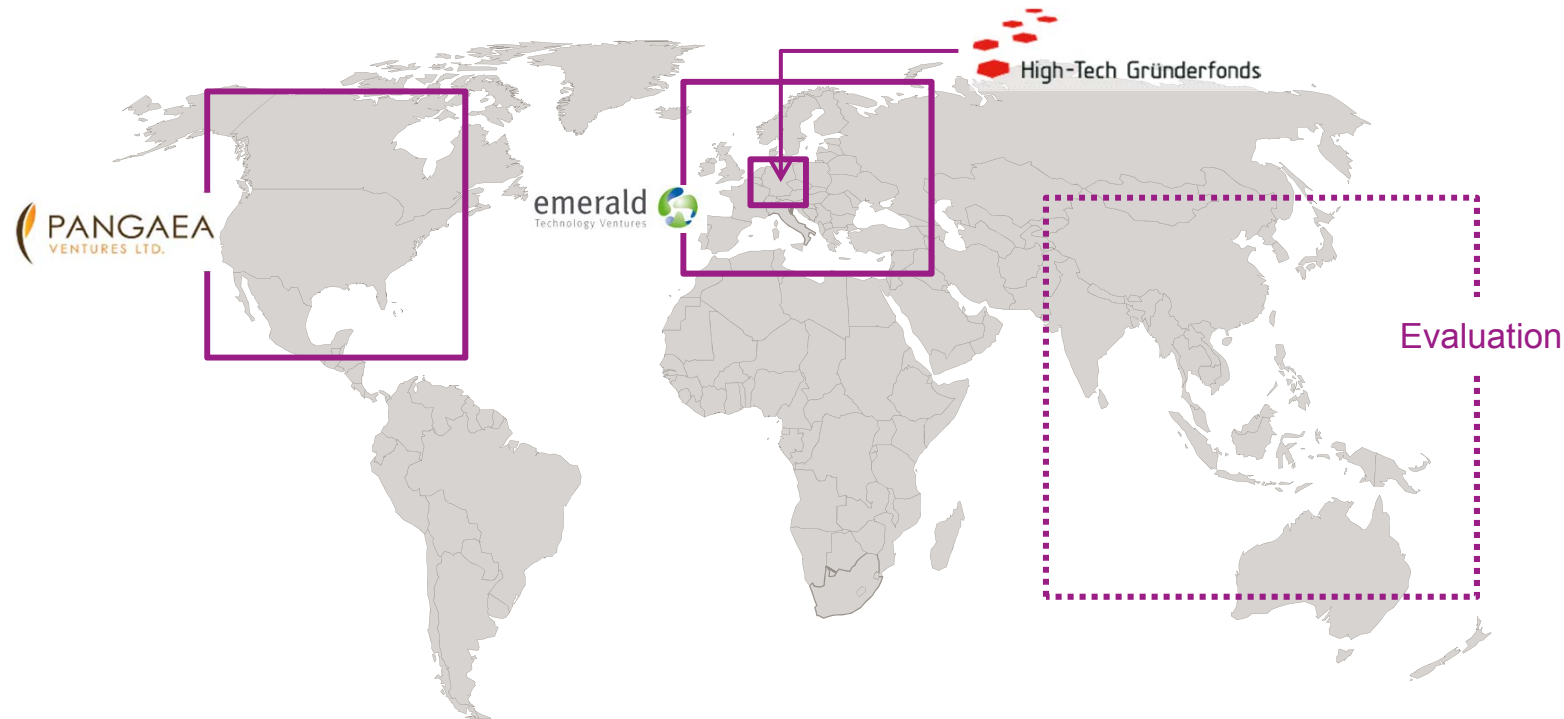
Global networks for driving innovation



Corporate Venturing supports innovation and growth strategy



- €100 million investment volume
- Investments in both start-ups and funds
- Focus on strategically important markets and technologies



Drivers for Innovation



- Innovation cycles are becoming ever shorter
- Innovation challenges are becoming more complex
- New global competence centers are springing up
- The availability of raw materials is being shifted
- Demands for sustainability are on the increase



Von der Forschung über die Entwicklung bis hin zum Vertrieb, von der Sonnencreme und dem Hochleistungsbleistift bis zum Benzin sparen in den Autos. Wir bieten Ihnen vielfältige Möglichkeiten für eine Berufsausbildung – Spaß beim Lernen inklusive. Wir sind der kreative Industrie Konzern aus Deutschland für Chemie, Energie und Immobilien. Weitere Informationen zur Karriere bei uns gibt es unter www.evonik.de/karriere.

Evonik. Kraft für Neues.





What if...

... the world's population grows by 83 million every year and the planet's resources remain the same?



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