A European Company with R&D in Japan
The Royal DSM case

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  The English language version of this document is leading.
- A more comprehensive discussion of the risk factors affecting DSM's business can be found in the company's latest Annual Report, which can be found on the company's corporate website, www.dsm.com

DSM of the Netherlands, a company

- with a total revenue of 10 bln EUR.
- 25.000 people spread all over the world
- With over 10% of these people involved in R&D activities
- Financially healthy

- activities in 3 main clusters
  - Materials: from high performance engineering plastics to resins for environmentally friendly water based coatings
  - Nutrition, as the world largest player in nutritional ingredients
  - Health, with leading positions in anti-infectiva (in partnership with Sinochem of China), and the worlds most renowned custom manufacturer in Pharma, from very small via very large molecules to fill and finish.
- DSM has unique Innovation initiatives in the areas of advanced biofuels that do not compete with the food chain, bio based chemical products that do not deplete the fossil oil reserves, and biomedical materials where patients can profit from DSM's unique combination of material and life sciences.
- These unique business positions of today are a result of a continuous transformation of the company over many years, that started off as a coal mining activity 111 years ago
- The successful transformation from coal to modern biotechnology as basis for both life and material sciences did not come easy or without pain
- But always supported by strong own R&D and Innovation capabilities, combined with strong external R&D networks
- Just to give you an example of this change:
  - In the last 12 years, the profile of the company has changed form in majority bulk petrochemicals and chemicals, with:
  - Less than 15% in Life sciences in 2000:
  - Over 50% in life sciences, and the remainder in performance materials and its key precursor materials in 2012 (and 2013…)
- In our company we want to be ready to assimilate with global societal trends that drive the business of tomorrow
- This is where R&D and Innovation step in in the history of DSM, and will be the key factor to develop our competences we need tomorrow
- Building a business on societal trends also creates a strong responsibility
- In building our businesses and changing our portfolio, there is always one leading principle:
  - We cannot be successful in a world that fails
- This is reflected in our Social Responsibility programs, in our business portfolio
- And this is reflected in the direction we are steering our Research and Development and Innovation activities: contribute to the world such that we sustain this as the place we and generations to come can live in.
- All this results in the following mission statement for DSM,
  - *Our Purpose is to create brighter lives for people, today and generations to come*

- Reflecting our orientation on sustainability and the longer term future.
- Where this may be not specific enough for DSM, I like to focus on the following sentence:
    - *We connect our unique competences in life science and materials science to create solutions that nourish, protect and improve performance*
- This talks about "Unique Competences", "Solutions", "Performance Improvement"
- All concepts that require a continuous inflow of basic knowledge to maintain the "unique" edge, knowing the problems of your customers, and applying this knowledge to create solutions that really work….

"European company with an R&D facility in Japan, the Royal DSM case"

we talk about R&D in a company with activities in Japan, that:

- Was able to transform, largely supported by Innovation
- This Innovation strongly supported by R&D
- This R&D building on many forms of partnerships, and
- We in DSM are convinced that R&D and partnerships will be our key to maintain our ability to change…. And as such be fit for the world of tomorrow.

- Japan – EU Policy Dialogue
    - QUOTE:
    - *"Recognizing Science, Technology and Innovation as key drivers for economic competitiveness, growth and employment, EU – Japan cooperation in this field has a huge potential for finding solutions to meet social challenges such as secure energy supply, sustainable development and rapidly ageing populations."*
    - Result: this conference and many other initiatives
- DSM value Statement
    - QUOTE
    - *"One cannot be successful in a world that fails"*
    - *"The challenges this world is facing are too big to be solved by one company or one nation…."*
    - Result: (few examples)
    - . DSM-Ajinomoto joint developments on Ageing Population
    - . Fujifilm, Mitsubishi Chemical Holdings, Ajinomoto, DSM joint Open Innovation Initiative

R&D in DSM: strategic drivers, partnerships

- 2 main drivers:
    - Strategies of Ongoing Business
    - Corporate Strategy: Desired future portfolio/profile of the Company
- 2 main R&D fields:
    - Basic: expand the fundamental understanding; scientific toolbox
    - Applied: create new or improved products/processes/applications
- 2 main approaches:
    - Own force R&D
    - Partnerships/Cooperation
- Partnerships/Cooperation come in many forms:

- Consortia
- EU programs
- Open Innovation initiatives (ventures, …)
- Contract Research with Universities/Institutes
- Cooperation with other R&D oriented companies

DSM: 30 years of experience in participating in Framework Agreements in the EU, also together with Japanese partners.

DSM in Japan

- Full DSM portfolio: Life Sciences and Material Sciences
- Marketing, Sales
- Business Development for Innovation products
- Product Development,
- Around 200 people
- 1 Development Laboratory,
- 1 plant
- Plus: 2 Joint Ventures (JSR, Toyobo)
- Staffing philosophy: Japanese staff (expats: 1% of the population)
- HQ in Tokyo

Japan and DSM: Market, Innovation and R&D, Partnerships and People

- <u>Business and Market Perspective</u>
  - Market for our products
    - Japanese domestic market marginally growing
  - Global Headquarters of global peers
  - Development, Specification and Decision Center for Customers
  - Joint developments with innovative customers
  - Prime Minister Abe's Economic Stimulation initiatives:
    - new additional drivers for Innovation
- <u>R&D and Innovation Perspective</u>
  - Highly developed R&D infrastructure: academia, Research institutions
  - Strong R&D in Peers: challenging and inspiring competitive landscape
  - Innovation oriented customers
    - Customer's growth driven by Innovation
    - Joint development projects drive DSM's Innovation

- <u>Cooperation/Partnership Perspective</u>
  - 2 JV's both over 25 years successful
  - Sponsorship of (basic) Research in Universities, Institutes
  - Joint Developments with Japanese companies
    - Ajinomoto – DSM Ghana, India projects
  - Advocacy for Open Innovation in Japan
    - "The problems of this world are too big to be resolved by one company, or one nation"

- People and Talent Perspective
    - Strong presence of top academia, institutes, companies ➔ extensive talent base in Japan in R&D…..

DSM R&D activities in Japan

- Over many years significant number of different initiatives with Institutes and companies

But….

- DSM's R&D traditionally strongly Europe Centered
    - All "Corporate Scientists" based in Europe
    - Expectations on speed not always met in our partnerships in Japan…..
    - "Managing by flying by" hamper continuity in Japan
    - Culture Differences in e.g. "Quality"

And on top:

- Growth with Japanese customers requires
    - Applications Development and
    - Product Development
- Capabilities close to the customer.

Decision for DSM R & D Center in Japan

- Cooperation is always our first option in Japan
    - Academia
    - Institutes
    - Other Companies

But….

- Cooperation is not always a viable option:
    - Competitive considerations
    - Lack of Infrastructure
    - Customer proximity/specificity
        - Prevents making use of existing R&D infrastructure in Japan

So….

- Establish own R&D Center: Establish own DSM R&D Material Science Center in Japan

Japan for DSM; Own R&D Center

- Opened April 2013
- With own R&D center:
    - Potential access to Japanese Innovation Initiatives
    - Connect to both DSM global R&D as well as Japanese local Institutes
    - Faster realization of innovation potential of customers
    - Started with focus on Development … grow towards more Research in time

DSM R&D in Japan: what problems did we encounter?

… in DSM……

- Some internal resistance to be overcome….
- Some NIH….

… in Japan…..

- Infrastructure:

        - To understand the bureaucracy
        - Certain feeling of no equal playing field versus Japanese Peers
    - People:
        - Acquiring enough status to be attractive for really good R&D people takes more time
    - Culture:
        - Service Orientation towards Japanese Customers may hamper Project selection needs towards global multipliers

But in the end great support from authorities!

Positive Experiences since the opening in 2013

- Strong sign of commitment to our customers
- Better, faster, more effective collaboration accelerating our Customers' Innovation Initiatives
- Solutions for cultural challenge

Potential Future Steps

- Further build resources to Open-up existing DSM Japan Materials Science R&D center to DSM Materials Science Business outside of Japan (Regional role)
- Create closer ties with Japanese Material Science R&D institutes
- Explore options to use the center in joint Research projects (EU - Japan R&T stimulation programs)
- Investigate options for similar approach for Life Science (Nutrition) activities of DSM

Conclusion

- Match between Japan – EU cooperation in Science, Technology and Innovation drivers with DSM's ambitions as responsible company
- DSM has broad (30 years) experience in EU Framework Programs
- Access to Research in Japan
    - Fundamental: via Universities and Institutes
    - Application: via cooperation with Japanese companies
    - Sensitive Co-development : DSM concluded own R&D in Japan is a necessity for carefully selected parts of the portfolio
- Such center is an asset towards innovation driven customers in Japan, win-win:
    - Supports Innovation in Japan
    - Supports DSM's business growth
- More transparency in possibilities to participate in Japan sponsored Research and Technology programs appreciated
- DSM would be very open to make its Japan R&D Infrastructure available for a EU – Japan jointly supported initiative.