Open Innovation in Analytical Science & Technology

Een kwestie van chemie
Open Innovation at DSM Resolve
Public Private Partnership COAST

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Chairman EB COAST
Director TMFI BV
The ever changing context

- Transformed into Life Science & Material Science Company
- Strategy 2015 - Driving focused growth
  - High growth economies
  - Innovation
  - Sustainability
  - Partnerships & acquisitions

Chemelot Campus
- Open Innovation - ChemMaterials
  - DSM, UM/MUMC+, Provence of Limburg
- Maastricht Health Campus included
- 500 MEUR in 10 years, 2100 extra jobs
- Included in Brainport 2020
DSM Resolve enables partners in their R&D process

**DSM Resolve**
- Delivers high-end **analytical**, **technical** and **SHE** services, in R&D context;
- **Is integral solutions provider** - providing solutions in the areas of **materials science**, **chemistry**, **life sciences** and **forensics**
- Brand of DSM R&D Solutions B.V., a Service Unit of Royal DSM;
- ISO 9001-2008, 17025 for selected methods.

**Key Figures**
- Turnover: 30 MEUR, 10 % growth/year;
- Fully self-financed;
- Employees: 170 FTE (30 % PhD);
- Customers: 50 % DSM, 50 % non-DSM.
Enabling technologies for R&D

Analytical Science & Technology is Enabling R&D
- Creating value - eyes of researcher
- Top research needs top analytics

What makes the difference?
- Customer Intimacy - partnerships
- Domain know-how
- Excellence in Analytics

The phases we passed
- DSM only (< 2004)
- Continue working for ex-DSM (SABIC, OCI, Lanxess, ...)
- Third parties - incident-based -> partnering
- Enabling for Chemelot Campus & Maastricht Health Campus (>2010)
Open Innovation & alternative business models made us robust for economic cycles

Enabling role is vulnerable
- Dependence on limited number of partners (*laatste mem*)
- Limited scalability (intimacy -> neighborhood)
- Limited margins

Open Innovation & alternative business models delivers robustness
- Joining know-how & experience delivers new value propositions
- Joint development - joint commercialisation

Examples: Instruments, Lifetec, Safety, Forensics

We survived 2008/2009 economic crises without problems
Innovations in Instrumentation is another business model

Chromatography
- Partners: NLISIS bv, University of A’dam, Maastricht Instruments
- Coupling of columns: Fuse, Tubes Split (Y-connector), Cassette
- Products introduced in the market

Portable Spectroscopy
- Partners: TIPb vof, Maastricht Instruments (Pieken in Delta project)
- Mobile NIR spectroscopy & sophisticated modelling
- Applications:
  - Law Enforcement (launching customer KLPD)
  - Hospital Pharmacy (launching customer AzM)
- Market intro scheduled for 2012
Lifetec gives us lots of opportunities to turn our know-how into value

Systems biology - high value service offering to pharma
- Partner: CellMade SAS, a French-based start-up
- Service platform for pharmaceutical industry
  - primary human cell models
  - high end analytics (cytometry, MS)
- Joint service platform in place and accredited
- Currently developing a European customer base

Diagnostics - a long term investment in building IP
- Partners: MUMC+, Maastricht Instruments, many others
- Air Breath Analysis - lung diseases like cancer, (child) asthma, COPD
- Dry Blood Spot - non-invasive blood analysis for disease screening, medication compliance, tox and forensics
- Currently developing IP positions and further market intelligence
DSM Resolve and Maastricht University jointly developing forensic case work services in TMFI BV

The Maastricht Forensic Institute
- Partners: Maastricht University - DSM Resolve
- Forensic Services are offered via TMFI BV
- Maastricht University:
  - Forensic Psychology, Psychology of Law
  - Forensic Medicine, DNA
- DSM Resolve:
  - Forensic Material and Chemical Analysis
  - Toxicology and drugs
  - Forensic fire and explosion research
- Developing large projects:
  - Regular Trimbos drug analysis
  - GGD ‘Suspicious Death’
Need for joint approach in Analytical Science & Technology

Joint opinion of lab managers in 2008:

- We experience increasing difficulty to recruit new employees in Analytical Science & Technology at Academic and professional bachelor level (quantity and quality)
- We experience that most academic groups are very application-oriented

Joint effort to set-up a public-private partnership in Analytical Science & Technology: COAST

- Dec 2008 start Foundation TI-COAST
- Feb 2009 support by Regiegroup Chemie
COAST aims to advance analytical science to drive innovation in the Netherlands

Primary objectives

• To ensure that Dutch organizations, in the “Topsectoren”* and beyond, apply the newest analytical technologies – giving them a competitive edge, driving their innovation and helping them contribute to society and the economy

• To strengthen the field of analytical science as an economic activity in itself, creating jobs and revenues in the analytical science sector

* COAST is relevant for at least 5 out of 9 Dutch ‘Topsectors’: Agro-Food, High-tech Materials & Systems, Life Sciences, Chemistry and Water
Analytical science develops measurement methods, instruments, and skills to interpret the results.
The three programs in our Strategic Agenda allow us to realize this ambition

1. Research & Development program
   - R&D lines

2. Human Capital program
   - Education
   - Career

3. Infrastructure program
   - Sharing
   - Remote experimentation
   - Data processing
COAST gained momentum and support since its inception

History and background

- November 2010: Start COAST
- Sept-Dec 2009: Fundraising

May 2008: Initial TI-COAST discussions
- December 2008: Founding of TI-COAST

2006: Initiation

August 2009: Business Plan complete
- June 2009: Participant survey & second participant meeting

COAST office in Science Park A’dam
Managing Director: Oscar vd Brink
COAST R&D Program – just before kick-off

First COAST R&D Program is part of TASC program
- Total budget 16 MEUR
  (1:1:1:1 ELI, NWO, private, knowledge institutes)

- R&D Program:
  - Revolutions in Resolution
  - Analysing intact systems
  - Bringing the lab to the sample

- Pre-proposals: ca. 20 projects submitted – wide diversity of topics and partners

- Waiting for final approval from Ministry of ELI

- First call open ASAP; second call in 2012
COAST Human Capital Agenda

Increased interaction with industry enhances scope and level of education of students.

COAST offers students a career instead of (just) an education.

Setting up a program for HBO together with Hogeschool van Arnhem en Nijmegen (HAN):

- Top-opleiding in Analytical Science open for students from other HBOs
- Selected students
- In English
- Including Saturdays and Summer courses
- Including ‘employeeships’ with industrial partners (grant system)
- Link with valorisation and research for SMEs

Currently working on funding.
The COAST Infrastructure program focuses on two lines:

- Instrumentation sharing: making high-end analytical equipment available to other COAST participants and for educational purposes;
- Data processing: increasing the computational power and data storage capacity available for analytical science applications

As a first step towards the realization of our ambitions in the infrastructure program we will perform part of the FES subsidized COMMIT program (http://www.commit-nl.nl).
More Information about COAST

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