CIO – Innovation management best practices
DSM and its approach to innovation management

Key features of DSM's approach to innovation along with a comparison with our 'BofB'[1]; 3M.

DSM is a Netherlands-based company of 21,351 employees. Blackrock Inc. holds between 3% and 10% of total share capital as of January 1, 2015.

DSM is a company which has fully embraced innovation as one of its core values. It has, through the publication of its annual reports and presentations provided considerable information – transparency - about how it goes about the process of managing innovation.

This paper outlines some of the features of DSM's approach to innovation.

White & Partners has followed DSM since 2008. Our attention was drawn to DSM because of its transformation and the openness with which it reports on its business.

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White & Partners comment

DSM is our example of a company which, while having almost every conceivable emphasis on innovation and the management practices which support same, and sustained itself since 1902, has not shown the financial performance that stakeholders might have anticipated.

What is most significant about DSM is the transition which has taken place over a century. DSM has transformed itself from a commodity supplier to a provider of high value-added products and services.

We provide a comparison of DSM with 3M. 3M is the subject of a separate CIOMAX report and has been researched in some depth by White & Partners. Of the companies which we have researched, 3M has the best set of innovation management practices and the results to show for it. DSM does not! Yet.

[1] 'BofB' refers to Best of Breed or Best of Best. 3M is currently our star performer when it comes to having the best innovation management practices and the results to show.

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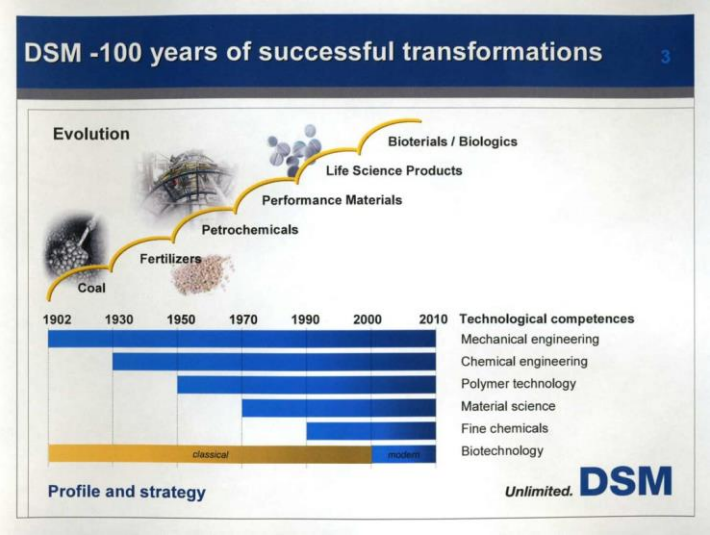
Introduction

The focus of this paper is on the breadth and depth of DSM's innovation management practices. DSM, in its own words[2], wants to become 'an intrinsically innovative company, with excellent innovation practices, and with an above-average return on innovation investments' and have employees to whom 'innovation comes naturally'. While the latter seems present, DSM's recent financial performance is lackluster.



DSM's Transformation

DSM[3] began as a mining company in 1908; a commodity business if there ever was one. Fertilizers came next followed by petrochemicals and finally the company moved into higher-valued products specializing in life sciences and materials science. Throughout its history it has gained experience in bio technology[4] and materials and it is this deep interest in science overall that now plays into DSM's strategic strength.

Today the company is almost exclusively active in high-end, value-added, products. It has a highly developed approach to innovation employing a variety of management initiatives to achieve their goals. The fact that DSM has such an array of innovation management initiatives and is so transparent about them sparked our interest in the company.

For a thorough presentation of the transformation from mining to life/material sciences there is no better source than Arjan van Rooij's book on DSM. There are two extracts which now seem even more important than ever.

> *Competitors often pose the main threat to a company. Responding to the innovations or other actions of competitors and defending the firm's commercial and technological position is therefore an important role of the industrial research laboratory*[5].
> *This book*[6] *is not about R&D as such; it is about the results of R&D and the relationship between R&D and business.*

If ever there was a strong argument for the need for customer-focused research and development, this is it. DSM responds to this idea through R&D spending at the business unit level and its centrally established Innovation Center. Innovation, while very much reliant on R&D in the broadest sense, is about linking business decision making to fundamental competencies of the corporation.

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[2] DSM Annual Report 2008
[3] The Company That Changed Itself, R&D and the Transformations of DSM, Arjan van Rooij, Amsterdam University Press, 2007
[4] Investor presentation; 2011
[5] The Company That Changed Itself – p. 17
[6] The Company That Changed Itself – Forward by Jan Zuidam, Deputy Chairman of the DSM Managing Board

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The Chairman's letter (2014) states that DSM now 'stands significantly transformed' due to the portfolio of products developed over the years. The program which is credited for driving this transformation is called 'DSM in motion', initiated in 2010, one year before our first review of DSM. The fifth year of this program is 2015.

Current plans are to 'refrain from large acquisitions for the moment' and focus on 'integrating and reaping synergies'. Having spent 2.8 billion euros on acquisitions since 2010, this is no surprise. In 2011, organic growth was 11% reportedly, at the time, well above DSM's target of 5-7%. Organic growth in 2014 was 3%[7].

To quote the Chairman, DSM has become a global company and innovation is being used to create 'a younger and more sustainable product portfolio'. The 'key short-term priority is, however, to focus on operational performance' in two of its business units, Nutrition and Performance Materials and to reduce costs in its overall overhead structure. Operational performance, organic growth and improved profitability are the current priorities.

DSM's Current Business Profile

Business group[8] directors report directly to the Managing Board. By North American standards the management structure at the top is complex but it is consistent with the European model and with DSM following the Dutch corporate governance code. A supervisory Board made up of independently appointed directors is in place. Below the top-level structure, DSM is currently organized into four clusters along with centralized traditional corporate activities.

DSM currently has four clusters but organized under two main categories; 1. Life Sciences: Nutrition and Pharma and 2. Materials Sciences; Performance Materials and Polymer Intermediates.

Life Sciences		Employees - 2014	Sales (million Euros)
	Nutritional Cluster	10,857	4,335
	Pharma (Partners) Cluster	3,324	2,000
Materials Sciences			
	Performance Materials	5,115	2,792
	Polymer Intermediates	1,423	1,727
Innovation Center		675	154

[7] In Q3, 2014 organic growth was 14%.
[8] Groups are coherent 'product market combinations'.

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Life Sciences

The **Nutritional Cluster** comprises DSM Nutritional Products (DNP) and DSM Food Specialties (DFS). The nutrition and food ingredients businesses serve the food and beverage, feed, personal care and pharmaceutical industries. Customized formulation activities Customer intimacy is a key success factor. Technologies in the Nutrition cluster are broad, utilizing DSM's competences in biotechnology (including fermentation), chemical process technology and particle engineering. DSM has the world's broadest ingredients portfolio and holds leading positions in many large ingredient markets for animal and human nutrition and health as well as personal care. Acquisitions in North America have been the main vehicle for achieving growth especially, as indicated in their recent report, Sales per employee were Euros 398,914 in 2014.

Animal nutrition and health, human nutrition and health, personal care and DSM food specialities are going global, each with ventures in China and/or India. R&D expenditures were up from 200 to 206 million Euros from our first report in 2011..

The Life Sciences **Pharma Cluster**, Pharmaceutical Products (DPP), is one of the world's leading custom manufacturing suppliers to the pharmaceutical industry. The cluster also contains DSM's 50% interest in the DSM Sinochem Pharmaceuticals joint venture (DSP). DSP was formed from the former DSM business group DSM Anti-Infectives (DAI). Number of employees is 3,324. Sales per employee were 204,000 Euros in 2014. The Chairman states that the cluster's 'performance still needs to improve'. R&D spending was 67 million Euros.

Materials Sciences

The **Performance Materials** cluster comprises DSM Engineering Plastics, DSM Dyneema and DSM Resins and Functional Materials, specializing in the manufacture of technologically sophisticated, high-quality products that are tailored to meet customers' performance criteria. Materials are used in a wide variety of end-use markets: the automotive industry, the aviation industry, the electrical and electronics industry, the marine industry, the sports and leisure industries, the paint and coatings industry and the construction industry. Sales per employee were 545,845 Euros compared to 492,000 as of our last report.

Engineering Plastics, Dyneema and Resins and Functional Materials made steady gains during 2014; operational efficiency and profit improvement are stated to be well underway. R&D expenditures were 143 million Euros up from 128 at the time of our first report.

The **Polymer Intermediates** Cluster Comprises caprolactam and acrylonitrile produced by DSM Fibre Intermediates (DFI). These products are raw materials for synthetic fibers and plastics. In addition, the business group produces ammonium sulfate, sodium cyanide, cyclohexanone and diaminiobutane. Sales per employee were 1,200,138 Euros versus 1,264,767 at the time of our first report. R&D expenditures were 16 million Euros down from 18 million at the time of our last report.

Corporate activities include the usual finance, human relations etc. but also the relatively recently-established Innovation Centre. The purpose of the Centre is to 'facilitate the company's strategic transition to become an intrinsically innovative organization'. Its role is to focus on areas outside the current scope of the business group. The Innovation Centre employs 675 employees. Emerging Business Areas has three areas; biomedical, bio-based products and services and advanced surfaces. Corporate activities employ 3,281.

Overall staff employed in R&D was 2,208 in 2014 as compared to 2,240 in 2013.

DSM's Global Initiative

DSM has embarked upon a major thrust into international markets, particularly China but also India and Latin America. This initiative is well underway and may provide the company with significant growth opportunities. Country Presidents have been appointed in China, India, Russia and Latin America. Innovation centers have been established in China and India and headquarters for DSM Fiber Intermediates has moved to Shanghai and DSM Engineering Plastics to Singapore. Research alliances have been established in Russia.

As decentralization gathers momentum the aggressive global initiative will test the company's management skills especially when it comes to innovation management. Only recently, with the extensive globalization taking place in China, India, Brazil and perhaps Russia and the desire to take advantage of this growth, have major corporations begun to decentralize research and development and other forms of innovation. As evidenced by other companies[9] reviewed by White & Partners Ltd. DSM is following a pattern with this same emphasis on internationalization/decentralization.

Research initiatives taking place in local markets is one of the features of this global initiative as it moves the company closer the key markets and customers. Sales in China reached US$2 billion in 2014 compared to 1.7 billion in 2013. In India DSM is focused on introducing more locally made products than ever before. A solar technology demonstration center is in place at its plant in Pune. Animal nutrition and health businesses are now located in Brazil, Argentina, Uruguay and Columbia. Russia's initiatives are stalemated for now but this business accounts for only 1% of sales. These are examples of DSM's determination to grow globally.

[9] See http://www.corporateinnovationonline.com for profiles of GE, P&G, Toyota, and John Deere

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DSM's Financial Performance and a Comparison with 3M

We have chosen to present DSM's financial performance in comparison to one of the companies, 3M, which also we follow and research. Similarities between the two companies lie in their emphasis on science and technology and size, although 3M is over three times larger than DSM in terms of numbers of employees. Both companies have been around for over a century and have proceeded through numerous transformations; one from a base in Europe and the other in the U.S.

DSM has four business units if one can identify the Innovation Centre as a 'unit'. 3M has 35 business units operating under five business – or segments, each of substantial size and balanced. Each spends in the range of 5+ percent on research and development so one might expect the same relative output in terms of new products and services. Both are now global in their reach but the Dutch have been at international business for centuries whereas U.S. companies have been, until recently (relatively), more region-centric in their ambitions.

DSM is approximately one-third the size in sales revenue and people as 3M.

DSM's return on capital employed is also about one-third (and declining) of 3M's

3M's stock performance has been exemplary over the last five years, DSM's stock price has been disappointing.

The differences between the two companies' lies in their financial performance and the success and trend lines associated with their new product/service initiatives. Of some significance is the structure of management with, of course, DSM with its European-based model with its Management Board and large regulatory environment versus the rather simpler U.S. model of a Board of Directors, committees etc.

In our opinion, of the companies which we have researched, 3M has the best set of innovation management practices in place and where the results of innovation in terms of new products/services and financial performance are clearly evident. DSM, on the other hand, has a great set of management practices, in the European tradition, but the financial results are not, most recently, that evident.

We examine several key statistics that enable a comparison; stock price performance, rate of introduction of new products/services and return on capital employed.

Stock price; over the last five years 3M's stock has increased substantially while DSM's has, by comparison, remained flat, save two intervening years. Data is from the end of June in each case.

	2010	2011	2012	2013	2014	2015
3M in US$	77.67	96.67	89.60	109.35	143.69	157.08
DSM in Euros	34.60	43.30	36.40	50.58	57.73	40

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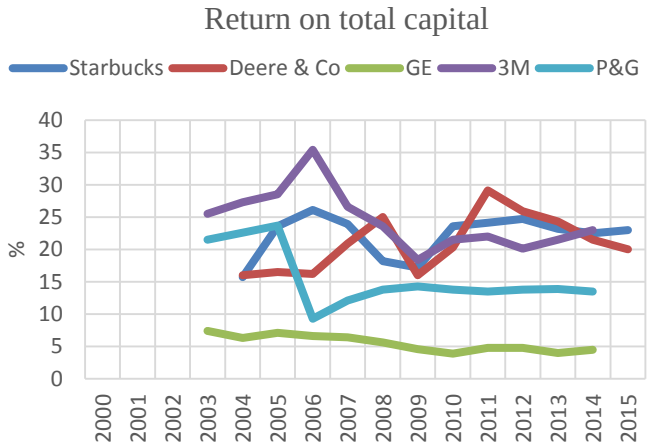
New products/services; DSM uses approximately the same key indicator as does 3M to measure this aspect of its innovation. For DSM the percentage, which measures products and applications introduced within the last five years, reached 18% of total sales in 2014. DSM's target is 20% for 2015. 3M, the first company to introduce and promote this measurement, has an NPVI of 39% for 2014, having risen from a level of 25% in 2005. Thulin's[10] target is 40% by 2017.

	2014	***2011***	***2010***	***2009***
Net sales (Euros millions)	9,283	*9,193*	*9,050*	*7,866*
Workforce	21,351	*22,224*	*21,911*	*22738*
Net Profit - % of net sales	14.5	*14.9*	*10.0*	*7.2*
EPS – per ordinary share	.78	*4.86*	*3.03*	*1.44*
Innovation sales target – 2015 is 20%	18%	*18%*	*12%*	*810/sales??*
Net Sales per employee	434,780	*407,000*	*413,000*	*346,000*
ROCE – continuing operations (%)	7.8	*14.3*	*15.0*	*7.2*
R&D Expenditures as % of net sales	5.2%	*5.3%*	*5.2%*	*5.1%*
Share price end of year - Euros	50.64	*35.85*	*42.61*	*34.46*

Net Sales; 3M's sales in 2014 amounted to 31.8 billion US$. DSM's net sales were 9.283 billion Euros or in US$ 10.4 billion; 3M is roughly three times the size of DSM.

Size of company; 3M does quite well when compared to other companies in our 'basket. DSM is a smaller company. DSM has 21,351 employee versus last count at 3M is 89,800. 3M is 4.2 times the size of DSM.

Return on total capital; as noted earlier, DSM's return on capital employed has declined over the recent period whereas 3M's has maintained a high rate over the last ten years, at almost twice the rate for DSM. We measure return on total capital for each of the five companies in our 'basket'. 3M is one of the best performers over the 15-year period[11].



ROCE for DSM was 7.8% in 2014. Latest returns on capital for 3M is or the order of 20 to 22%. Reports for DSM explain that 'progress on the target for Return on Capital Employed (ROCE) of more than 15% 'was delayed as a result of the company's accelerated acquisition strategy and the deterioration of global macro-economic conditions'.

[10] Thulin is CEO and Chairman of 3M

[11] For further information please refer to the web site; http://www.corporateinnovationonline.com – under CIOMAX reports.

Sales per employee; Euros per employee at DSM is 434,780 (US$ 487,823[12]), for 3M the similar top-level figure is US$355,034 per employee adjusted for exchange differences. Does this indicate a more efficient result for DSM?

DSM share information;

Ordinary DSM shares	**2014**	**2013**	**2012**	**2011**	**2010**
Net profit per share	.78	1.52	1.62	4.86	3.03
ROCE in %[13]	7.8	9.6	8.9	14.3	15.0
Shareholders' equity	5723	5908	5874	5784	5481
Dividend	1.10	1.15	1.02	1.00	.95
Highest price	57.97	59.75	46.29	46.82	42.85
Lowest price	44.44	43.93	36.33	30.54	30.43
As at December 31	50.64	57.16	45.79	35.85	42.61

The company is listed on Euronext Amsterdam. As of 6 August 2013 DSM began trading on OTCQX International Premier, a segment of the OTCQX marketplace reserved for world-leading companies that are listed on a qualified international exchange, undergo management reviews and provide their home country disclosure to U.S. investors.

Annual report length[14]: DSM's annual report for 2014 is 220 pages in length. 3M's is 125 pages! The comprehensiveness of DSM's annual report is outstanding if not, in its detail, overwhelming. One is left with the impression that the regulatory reporting requirements for DSM are more burdensome than for 3M but on the other hand it just may be that DSM places even more importance on transparency and openness than 3M; one of the best we have come across.

[12] As at June 12, 2015.
[13] *Capital employed*. The total of the carrying amount of intangible assets and property, plant and equipment, inventories, trade receivables and other receivables, less trade payables and other current liabilities.
Return on capital employed (ROCE). Operating profit as a percentage of weighted average capital employed.
[14] Admittedly an odd choice for comparing the two companies.

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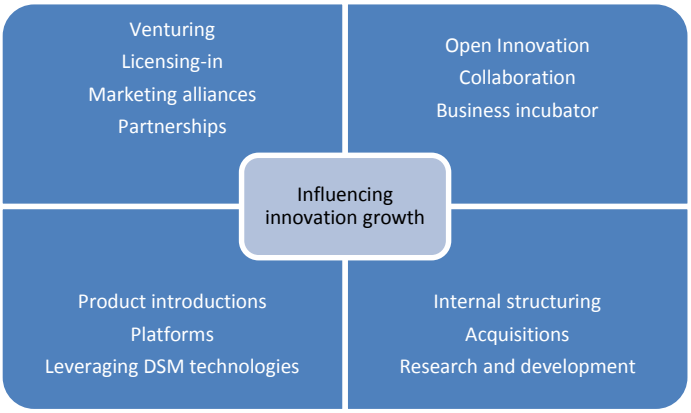
DSM's Innovation Management Practices

DSM has a variety of initiatives which reflect their strong interest in innovation and change management. Set out below are examples. DSM's annual report for 2014 is quite explicit about these and other initiatives.

A special initiative called **Vision 2010** was launched in 2005 – the intention being to give a boost to DSM innovation. Innovation goals were set in terms of the achievement of 'innovation sales' in absolute Euro terms. This measurement has since been changed to reflect the more normal corporate practice of measuring percent of sales of new products versus all products in a five-year period – but the intent was to measure success and report quite openly on achievement or otherwise.

The drivers of innovation as set out in 2008 were, according to DSM; research and development, product introductions, acquisitions, and open innovation and cooperation with the academic world[15]. Current reports place much more emphasis on continuous improvement where, earlier, this topic received less attention. Continuous improvement is perhaps not newsworthy but, like Starbucks[16], if this area is neglected rising costs and poor financial performance can soon be a problem. DSM may now be facing up to the same issue.

Of special interest to those following innovation is the use of a **self-assessment tool**, which the company developed together with McKinsey. The tool is intended to map the innovation practices in all business groups and compare them with practices in their peer and competitive[17] companies. DSM confirms that the results from this self-assessment now confirm that DSM performs better than the industry average but the reviewer is not provided with any comment beyond this. It is therefore difficult to understand the scope of the tool, its rigor, and more importantly, how much better DSM is than its competitors.



DSM set up an **Innovation Centre** in 2006, which engages in venturing activities which are outside the mandates of the business clusters. The Centre's stated purpose is to:

- target innovation-driven revenue,
- extend the technological base of DSM,
- establish an improved innovation process and
- establish an innovation-oriented culture.

[15] Annual Report 2008
[16] See http://www.corporateinnovationonline.com for a review of innovation related to Starbucks' recovery
[17] Peer group: AkzoNobel, BASF, Ciba, Clariant, Danisco, EMS Chemical Holding, Lanxess, Lonza Group, Novozymes, Rhodia and Solvay

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These initiatives have the objective of contributing to or becoming new 'platforms'. In a sense the Centre is a rallying point around potentially new 'platforms'; i.e. those innovation interests which give promise of becoming more significant to DSM but where it is inappropriate to put the initiatives within the current business clusters. This management practice is consistent with approaches taken by 3M, P&G and others who recognize the importance of applying different performance criteria to fledgling initiatives; start-ups and the like.

DSM took steps to engage its employees around the world through the use of an **Employment Engagement Survey**. Introduced in 2007, it has now been used three times. A total of 19,800 employees (with a response rate of 91%) participated in the 2007 and 17,684 participated in 2014. This initiative, an attempt to communicate with and understand the needs and aspirations of its global workforce, is included as part of innovation initiatives since, according to our research[18], a number of factors under the heading of communication, listening to people, etc. are part of a culture which encourages innovation. Testing this dimension of innovation is very relevant to innovation success.

> *'For the seventh time, DSM held its worldwide Employee Engagement Survey. This survey measures engagement levels determining how employees score on a combination of the following attributes: commitment, pride, advocacy and satisfaction. In 2014, the Employee Engagement Index was measured at 70 percent (2013: 71). This is in line with the global standard of 70 percent. DSM aims to be part of an external benchmark of high performing companies with index scores of over 80 percent favorable. The survey will now be run on a two-year cycle that will help DSM focus its efforts on follow-up improvements.'*

DSM Venturing became most active in 2007. Venturing engages in situations which could prove relevant to its business groups and may invest directly or through partnerships or even in venture capital funds. Investments range from Euros 250,000 to 5 million with participation in the 5% to 20% range, clearly a minority interest. Venturing was, as of 2008, a participant in 20 companies and 11 funds. Joint venturing is another of the management practices employed as exemplified by its recent venture with POET to make bio fuels.

With its **Functional Excellence in Innovation program** the company wants to raise the innovation bar even further, since it aims to be among the top innovation performers in the business. The Excellence in Innovation program focuses on five key areas:

- Market understanding
- The innovativeness of the business groups
- The delivery of DSM's top 50 innovation projects
- Entrepreneurship
- Performance orientation

[18] See http://www.corporateinnovationonline.com for a list of 25 Factors impacting innovation

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This program was established in 2006 and is aimed at optimizing 'innovation infrastructure' and to improve key behaviors including leadership and teamwork skills. The idea is to create value through the use of best practices.

Research and Development[19] (R&D) plays a key role in the realization of DSM's innovation strategy. Most of the annual R&D expenditure – at close to 4.2% of sales - is directed toward business-focused R&D programs. In addition, DSM has a corporate level research program in place to build and strengthen the technological competencies the company needs to execute development projects. Overall, expenditure is of the order of 5.2%.

DSM[20] undertakes projects, staffed by **multi-disciplinary teams.** As an example, teams consisting of researchers specialized in genetics, fermentation process experts work alongside of material scientists. According to DSM, this arrangement provides 'DSM with unique opportunities for value creation, which cannot easily be matched by others in the industry'. 'Real (radical) innovation is often achieved through 'cross pollination' between technologies and businesses.

In addition, DSM uses a **portfolio management** scheme to ensure a good balance between incremental and radical innovation. This facilitates discussions on the composition of the innovation portfolio and helps to optimize the mix between incremental and radical innovation within the company. For the radical part of DSM's innovation portfolio, a global, company-wide portfolio approach has been adopted. This contributes to a **long-term focus** on Life Sciences and Materials Sciences as the key pillars of DSM's strategy and encourages **cross-fertilization** between the two fields. The Managing Board decides on the composition of this portfolio.

DSM has set up a **uniform reporting system on innovation** which has contributed to a clear overview of the current portfolio of innovation projects. The approach is dynamic and projects are required to pass through various 'stage gates' in the pipeline. An example in the Nutrition cluster[21]: 40 projects netted 20 which were moved to a later stage – a success rate of 50% (P&G expects to fail 50% of the time and if it does not have this failure rate, there is concern that it is not innovating). Similarly in the Performance Materials cluster, projects move through the process and lead to new products or 'platforms'. In 2008, the goal was to achieve Euros 200 million by the year 2010 and this was achieved by keeping the pipe line full of worthwhile projects. The gates to the process are entitled; idea generation, business feasibility, development, scale-up validation, and lastly, transfer to running business.

To keep the right balance and focus in its innovation efforts, the company also makes sure that non-viable products and processes are stopped and that good opportunities that are not consistent with the corporate strategic focus are spun out. Ideas that enter the Open Innovation funnel go through a Project Management Process (PMP). The funnel is continuously fed with embryonic

[19] DSM Annual Report 2008
[20] DSM Analysts Conference 2007, Presentation by Rob van Leen, Chief Innovation Officer
[21] Ditto

business ideas. Potentially successful new products or new processes leave the funnel as they are ready to start their contribution to the strategic goals of the business.

Opportunities and ideas that could lead to new platforms are gathered in a threefold approach: via the DSM Innovation Center, via individual business groups and at the regional level. A form of stage gating, which DSM has been using for many years to steer individual innovation projects, is now used to steer platforms.

DSM has established its own **'Business Incubator'** aimed at exploring even other opportunities where, based on DSM established technologies, opportunities could emerge. Future 'platforms' are sought. Often this initiative is done in collaboration with industry partners and current and future customers. Goals are explicit but are estimated to be achieved over a longer term that one or three years; the example provided suggests achievement of 1 Billion Euros by 2020 with average profitability in 2020. The DSM Business Incubator serves as the cradle for future emerging business areas. Within the Business Incubator, DSM explores opportunities in new areas where its technologies can meet current and future market demands.

These **innovation platforms** draw on DSM's broad and deep competences, have real and significant commercial potential and address the key global trends in food, health and energy. Developments include (but are not limited to) the following:

- Bio-based food and feed processing ingredients
- Food and feed ingredients with health/performance benefits
- Bio-based clean/green materials for coatings, automotive and electronics
- Materials for life protection and sports
- New business models, for example, the brand licensing strategy of DSM Dyneema
- EBAs: DSM Bio-based Products & Services, DSM Biomedical and DSM Advanced Surfaces

According to DSM, **less than 5%** of the embryonic business ideas ultimately result in economically viable products and processes.

The DSM **Learning Architecture** consists of four program clusters: Executive Programs, Management Programs, Functional Programs and e-Learning Programs. This architecture creates a common and coherent concept of learning and program design, facilitates the development of a DSM learning culture and provides enhanced learning for talent. The programs are designed and delivered in close cooperation with leading international business schools and global training providers (IMD, Wharton, Erasmus University) and are supported by a diverse internal faculty, primarily consisting of DSM's Top Management.

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DSM has recently developed a **Business Innovation Analysis** (BINA) methodology in order to systematically explore innovation opportunities. The six sources of innovation include (in random order):

- Brands and Design,
- Business Model / Monetization,
- Market and Application,
- Business Biotope,
- Process / Costs, and
- Technology.

The basis for the BINA is the Innovation Dataset including 'mega trends, business position, opportunity landscapes and capabilities. These four basic elements are made specific in a Business Innovation Dialogue to finally create strategic opportunities.

A summary of DSM's innovation management initiatives is provided in Appendix A which is set out as a work sheet which other organizations can use – the **'Innovation management check list with examples from DSM'**. The 'x' indicates a well-established presence in DSM's adoption of each marked initiative.

While DSM is the recipient of many awards for its developments – and these are well documented in the various reports – there is little mention of **awards to individuals** within DSM or mention of the existence of a special award system for individual innovators per se. While the desire is to make DSM intrinsically innovative and therefore everyone should be involved, it would not be a surprise that certain individuals stand out. Innovation management practices of U.S. headquartered companies such as 3M, GE, typically have a means of recognizing outstanding individual innovative performance. Perhaps DSM's culture is different than that found in the U.S.

On the subject of transparency, DSM has two other rather unique reporting features. The Managing Board hires an outside firm – KPMG - to provide 'assurance on the information in the DSM Triple P Report 2008[22] – issued by DSM and used as part of this review. As further indication of DSM's transparency, the Report provides a section entitled **'What still went wrong'.**

A further initiative is DSM's **'One DSM Culture Agenda'**. The idea, as the company expands globally and therefore culturally, is to 'create a common language across the organization' and bring about greater cohesion. This initiative, introduced in 2012 was a result of the Employee Engagement Survey noted earlier in this report. A measurement used is the 'Circles of Thoughts' which went from 50 members to nearly 900 members. The program is evidently well supported throughout the organization and provides a means for collaboration and understanding within the organization which would not have otherwise been possible.

All in all, DSM is an impressive company in the manner by which it has transformed itself over decades and its long-standing but changing approach to innovation management.

[22] See DSM Triple P Report 2008 for more details

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Appendix A
Innovation management check list[23] – Part One

Type of innovation management initiatives		Examples from DSM Practices		DSM
Employee/stakeholder surveys relating to innovation				
	The scope of the survey is not available but it is assumed that the survey would touch on matters at least related to innovation; such as communication, rewards etc.	Participation rate is high even after several years.		x
Dedicated organization arrangements to spur innovation				
	Use of technical, business and executive champions			?
	Use of task forces	Multi-disciplinary teams		x
	Use of venture teams			?
	New venture division	DSM Venturing established.	Explores emerging markets and technologies.	x
	Business incubation	Innovation Centre works to establish new growth 'platforms'.		x
	SBU proliferation	Not yet in common use.		
	New business development within SBU	Separate centers established.		x
Acquisition/Divestiture				
	Strategic acquisition	10 partnerships and acquisitions in addition to Sinochem and Martek		x
	Spin-off	JV on bio fuels global licensing		x
	Spin-in	Not evident		
Financial Mechanisms designed to spur innovation				
	Corporate venture capital	DSM Venturing		x
	R&D partnerships	Many examples		x
	Licensing	Intention in bio fuels joint venture		x
Technological structure designed to broaden and deepen innovation competencies				
	Central R&D	Established an Innovation Centre at corporate level.	DSM has a corporate research program focused on development projects.	x
	Decentralized R&D	DSM is in the process of establishing centers in China and India.		x
	Balanced R&D	So stated in annual report.		x
	Contract out	No evidence of total outsourcing related to innovation		

[23] Check list content was initially developed by staff of Arthur D. Little Inc. and subsequently adapted and modified by White & Partners

Appendix A
Innovation management check list[24] and examples from DSM – Part Two

Type of innovation management initiative		Examples from DSM		DSM
Strategic alliances aimed at marrying internal with external competencies				
	Joint venture	Worked with Crucell N.V. on breakthrough initiative.		x
	Three-tier venture	Engagement in Biomedical – a public private partnership		x
	Supplier partnerships			?
	Customer partnerships	DSM Dyneema with Badinotti		x
	Union partnerships	Perhaps not relevant given European model		
	Privileged relationship; with a source of technology	Dupont, POET		x
	Government-sponsored venture			?
Corporate governance and innovation values aimed at spurring innovation				
	Outside advisory group	Governance follows classic structure	No outside innovation group	
	Strengthened Board role	No change evident re innovation		
	CIO/CTO role	CIO was evident in 2008	CTO role in place	x
	Corporate value re-orientation	Development of 'Vision 2010' – set out in 2005, commitment to innovation.	DSM should become 'intrinsically innovative'	x
	Customer viewpoint	Business groups focus		x
	Idea generation management	Implemented a project-management approach dedicated to innovation.		x
	Measuring innovation	Adopted % new product sales as main measure.		x
	Incentives/rewards for innovators	Not evident for individuals.		
	Open collaboration	Interaction with industry partners and technology thought leaders re Life Sciences and Materials Sciences. Linkages with research institutions.		x

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