Interview: Colette Alma-Zeestraten – Director General, VNCI – Association of the Dutch Chemical Industry, The Netherlands



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Colette Alma-Zeestraten tells PharmaBoardroom about how the Dutch Pharma Industry is adapting, how it is making use of clusters to become more competitive, energy efficient, and innovative, and how the nine billion euro contribution the pharmaceuticals sector makes to the Dutch chemicals industry.

Over your last 10 years at the VNCI, what are some biggest macro-level changes you have seen for the chemistry industry in the Netherlands?

The biggest change we have seen has been due to globalization, which has brought a clear shift in the epicenter of chemical activity from Europe as the biggest market and manufacturing area to the emerging markets such as China and India. The modern day chemical company has focused more on specializing into a specific domain in which they aim to be the global leader. In tandem, chemical companies in the Netherlands have focused much more on safe production with increased norms and standards, while open innovation and collaboration have become common themes in terms of development and growth to face the challenges of globalization.

In the past where many companies favored an integrated approach internally, today we see many companies that decide to operate on the same site to exchange raw materials, products, and utilities, as well as the risk sharing benefits between company partnerships in terms of innovation. Many business clusters have thus developed in the Netherlands to reap the benefits of these collaborations. A good example is Chemelot located near Maastricht where many businesses have decided to place the hub of their businesses, as well as other chemistry clusters in the Netherlands. Since the early 2000s great strides have been made in terms of innovation, creativity and innovative product development, as well as the interplay between company partnerships.

Finally, energy has brought about major changes in the chemical industry. In the early 2000s, many predicted the decline of the US chemical industry due to difficult access to energy sources, but the development of shale gas has ended these concerns on security of supply and rendered the United States almost fully self-sufficient in terms of energy. Furthermore, China uses coal as an energy source, and the Middle East is also very much self-sufficient, while in Europe we find that we are not self–sufficient, which poses certain challenges to the chemical industry.

Given the shift in supply side with demand moving more towards the United States and the chemical side moving towards China with the lower cost of labor and goods production, what has and is the Dutch industry doing to maintain a competitive position globally?

As a first element, the Dutch chemical industry has been selected as one of the nine top sectors of the economy by the Ministry of Economic Development. This Top Sector has prepared an in-depth 2030 Roadmap for the Netherlands.

Developing and growing clusters is a huge factor that we are currently focusing on to be more competitive internationally. Clusters bring better potential for businesses in terms of energy efficiency and resource efficiency. As one example, the aluminium and metal industry are currently working together to find carbonic sites and processing, which produces a cheap source of carbon that also decreases carbon dioxide emissions. A very targeted acquisition of companies is also required for the clusters, as well the acceleration of innovation and creativity within this field.

Human capital is an essential aspect to strengthen creativity and innovation within the country. The number of students in the chemical fields have increased significantly within the sector in the Netherlands, on all levels that include the scientific, engineering, and operating levels. To help foster this human capital element, whave set up iLaps for spin offs for universities, where new companies and businesses have the potential to start and mature, as well as Centers for Open

Chemical Innovation around the different clusters where start-up companies can be housed and helped to grow further. There are many collaborations between business schools and universities for students to work in chemical companies to not only develop their knowledge but to further help the advancement of new start-ups in the Netherlands.

Regarding competitiveness on the energy side of the equation, a European program that was initiated for the diversification of feed stocks. In Europe, we need access to feed stock and energy from all possible sources. This is a cause that should be developed with the European Commission, as well as keeping in mind electricity and gas grids. In the United Kingdom, shale gas exploration has been a recent development, but the Netherlands is not exploring such gas sources, especially given the problems surrounding the recent Groningen earthquakes LNG and biomass are both areas we are looking to diversify into in the Netherlands in the upcoming years.

Considering the industry's goal to become and be perceived as "clean, innovative and safe", how much of overall R&D investment is being made on the process, green tech side, as opposed to radical innovation of new capabilities and compounds?

Product innovation has been directed toward sustainability. Akzo Nobel and DSM are both companies that have been nominated for sustainability indexes over the past years. These two Dutch companies monitor products on the market to ensure a capability and sustainability outcome that are better than the market average. In general, innovation activities are geared to manufacturing products that not only have an improved product performance but also better sustainability.

Looking at the activity that takes place in Plant 1, how cutting edge and how significant are the developments that are taking place in the Netherlands?

Plant 1 is significant but there are many other facilities such as pilot plants in Chemelot that are noteworthy as well. The main objective is to accelerate innovation through more efficient pilot plants because of the struggle it is to implement new technology in chemical industry. Long term impacts such as corrosion s that disturb the processes and affect instrumentation and assets are always a concern for the chemical industry, so innovation sometimes tends to lag. Pilot plants help make the process more efficient and increase the speed of innovative developments.

Looking at this type of activity, can you give one or two examples that fully demonstrate the strength of this model and what the Dutch are capable of doing in the chemical sector?

The most innovative sustainable examples come from Chemelot. Floyd is a good example of a company that has constructed a new reactor type which has low volume and high flow of products through it, in turn producing products that are safer and specified to the identification of the product. Floyd's pilot plant is currently under construction in Chemelot and will partner with other local companies. Aventium Chemicals pilot plants that are also located in Chemelot, and the company has made an impressive product in terms of the permeability of gases.

We've seen somewhat outdated figures, which vary quite significantly, suggesting that pharmaceutical related products account for between 10 and 20 percent of Dutch chemical sales. Today, in 2015, just how significant of a customer is the pharmaceutical sector to the Dutch chemical industry?

The pharmaceutical sector and specialty chemicals constitute approximately 15 percent, or about nine billion euros, of local chemical industry. Most of the pharmaceutical production in the chemical industry contributes to the biotech industry.

Do you think even more chemical companies involved in the pharmaceutical industry will enter the Dutch market within the coming years?

The Pivot Park in Oss is a good example of emerging Dutch chemical start-up companies. The VNCI promotes many of the companies in that region to further enhance development of clusters in the Netherlands. In Nijmegen, the Netherlands also hosts an impressive number of synthesis based service companies that produce chemicals and products for the pharmaceutical sector. These companies also work on contract chemical synthesis.

Looking forward five years, with the Presidency of the EU, next year, as well as the need for a grid structure that you mentioned for the chemical industry at the European level. Do you have any recommendations as to what should be looked at during the Dutch Presidency?

Energy will be one of the main subjects discussed during the presidency as well as bio-economy. We hope to profile the chemical industry as a player in solving important issues in the market. The chemical industry, can, for example play a substantial role in the energy system by balancing intermittent energy from solar and wind energy. We will also promote the infrastructure for enhancing innovation in the regional centers of the Netherlands around universities, schools, clusters, and business sites.

Looking forward five years, what would you like to accomplish on behalf of the VNCI?

I would like to see strengthened eco-systems where large multinational companies are working together with smaller start-ups. In addition, I would like to help foster start-ups in the Netherlands and the rise of these start-ups to become bigger multinational companies.

And finally, would you like to tell our readers a little about yourself.

I have a background as a biophysical chemist from the agricultural University of Wageningen, where I studied molecular chemistry and sciences. I did my PhD as well in biophysical chemistry and worked for Royal Dutch Shell for many years as an analytical chemist, as well as in the areas of chemical manufacturing and management, environmental management, R&D management for research outsourcing university collaborations, and strategy & corporate affairs. After my time at Shell, I collaborated with the NGO, the Dutch Initiative for Sustainable Development, organizing the collaboration between companies and society on sustainability in the Netherlands. More than 10 years ago, I moved to the Association of the Dutch Chemical Industry (VNCI) as Director General.

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