




## **“The chemical industry is already quite advanced in terms of automation”**

*Jean-Pierre Clamadieu, CEO of Solvay, talks about the European Chemical Industry and the development of Solvay.*

An interview by Ignacio Garcia Alves, CEO of Arthur D. Little



*“The chemical industry is reshaping around several major trends, which it is critical to anticipate”*

ergy costs there are growing discrepancies around the world, with Europe operating at a disadvantage to other regions. Economic growth is another essential theme for our industry, as we need to anticipate different growth levels across the globe. We have lower forecasts for Europe, higher prospects in emerging countries (with recent doubts around Brazil and China), while we expect North America to get back to solid growth, with the exception of the oil & gas sector, which has been hit by the decline in global oil prices.

Sustainability is also critical for chemical companies, for two reasons: We have a responsibility towards society with regard to how we operate, but there are also major opportunities in developing sustainable products and applications which contribute to solving some of the major challenges our planet is facing. Our stakeholders are challenging us positively when it comes to our impact on the planet, people’s health, and many other topics. The sustainability challenge is now an integral part of our strategy.

**Arthur D. Little:** As President of CEFIC (European Chemical Industry Council), what trends do you identify for the sector?

**Jean-Pierre Clamadiou:** The chemical industry is reshaping around several major trends, which it is critical to anticipate. Energy costs and access to raw materials are one of those trends. When it comes to en-

**Arthur D. Little:** After 12 years as CEO, first of Rhodia and now of Solvay, what has been your practice of anticipating the future?

**Jean-Pierre Clamadiou:** The situations at Rhodia and Solvay were dramatically different and consequently required very different ways of planning.

At Rhodia, the survival of the company was at stake, and we had short-term pressures on cash, meaning the primary requirement was to keep control of our own future.

The path was narrow and risky. Planning revolved around portfolio management, where we had pressure to sell assets at the best price, based on anticipating what would be core for the future of the company. For the remaining business lines, the challenge was to survive the crisis.

When Rhodia merged into Solvay, conditions were much more comfortable, with a solid balance sheet, strong and stable reference shareholders, a wide and diverse portfolio of activities, as well as a powerful, positive internal approach to integration.



*“Solvay has identified its growth platforms around advanced materials and advanced formulations. We are now the world leader in high-performance plastics, with proven successes in smartphones and automotive, where lighter materials are key”*

Nevertheless, it was important to immediately launch a transformation process for the whole group and make sure that the entire organization would put itself in motion.

**Arthur D. Little:** How have you shaped the Solvay strategy in this changing and challenging environment?

**Jean-Pierre Clamadieu:** Managing our portfolio of activities is the first of our two transformation levers: We wanted to better align our strategy with available opportunities. This has enabled us to focus on domains where the relative cost of energy is low, i.e. with high added value and differentiation, where we can tailor our products to the specific needs of our clients.

Solvay has identified its growth platforms around advanced materials and advanced formulations. We are now the world leader in high-performance plastics, with proven successes in smartphones and automotive, where lighter materials are key. Solvay is also a leader in silica for fuel-saving tires. In formulations, Solvay has a leading position in some segments of the home and personal-care markets, agro-chemistry, and oil exploration and production.

Our portfolio transformation lever is also driving the divestment of our operations in more challenging sectors, such as European PVC, which will ultimately be sold to Ineos.

The recent acquisition of Cytec demonstrates how our vision allows us to shape our strategy. This acquisition will provide us with access to some key technologies in advanced materials, specifically composites with high mechanical resistance. Cytec has a strong position in the aerospace industry, with long-term orders for its products, while it is also developing solutions for other markets, such as automotive.

Our second strategic lever is to achieve greater operational excellence. We have adopted a strong and open approach, questioning our internal ways of working in several essential fields: production (e.g. how to become more flexible and more cost competitive, and how to lower the need for capital), supply chain, client relations, and innovation. We have developed different toolboxes available to the business to make rapid progress in each of these fields.

We have also put in place a management model that supports our transformation.

The complexity of our business requires high decentralization to be able to succeed. The building blocks of our model are the global business units (GBUs), led by their president relying on a strong team. They propose their strategy and execute it with autonomy. The GBUs are supervised by a thin corporate layer. We have a small executive committee made up of five people who share the responsibility (with the same incentives) and act collectively.

**Arthur D. Little:** Developing competitive advantage requires you to better anticipate client needs. How do you achieve this?

**Jean-Pierre Clamadieu:** Solvay is indeed shifting from commodities to specialties and more and more developing tailor-made formulations for each of our customers, which means a better understanding of our client needs and plans, and we still have to progress on that front. We need relationships built on trust to be able to share confidential information on strategic initiatives and goals.

One major challenge is that clients have product cycles – from R&D to end of commercialization – of very different lengths, ranging from a few months in smartphones to 20-30 years in aerospace, automotive being in the middle with five to 10 years. We have to adapt to these horizons, but the common denominator is to create trust with our clients.

**Arthur D. Little:** Innovation is clearly vital to Solvay's business success – what are some of the key features of how you structure innovation management across the group?



**Jean-Pierre Clamadieu:** In line with our decentralized management model, 80% of our R&I resources are managed within the GBUs and 20% only at corporate level. This also demonstrates that we engage in client-focused R&I, which we see as key to our success. For innovation to happen, we



favor having a dialogue with several clients (rarely with just one), with which we create specifications. To this end, we have also invested in growing our marketing capabilities, which helps this dialogue between the engineer with a scientific mindset and the client with its functional requirements.

*“Solvay is indeed shifting from commodities to specialties and more and more developing tailor-made formulations for each of our customers”*



## About Solvay

Created in 1863, Solvay is an international chemical and advanced-materials company. It generates 90% of its net sales through activities in areas where it ranks among the world's top three players. It serves diversified global markets, varying from energy and the environment to automotive and aerospace, and electricity and

electronics. The group employs around 30,000 people at 145 sites in 53 countries. It posted 12.4 billion euros in net sales and 2.3 billion euros REBITDA in 2015. The group also operates 21 Research and Innovation (R&I) centers. In 2011, Solvay acquired fellow chemical company Rhodia. In 2015, it bought the Cytec US-based

company to boost its offering in advanced materials technology for the aerospace and automotive. Jean-Pierre Clamadieu has been CEO of the company since 2011, and he spoke to us in his office at Solvay's global headquarters in Brussels.



GBUs are challenged on their R&I pipeline by the executive committee, mostly around accelerating those R&I investments where there is a good chance for growth, while cutting less promising projects. The goal is to achieve a balanced innovation portfolio, where GBUs look at different time horizons and spread risks.

Solvay R&I contributes significantly to our value creation. Our success derives from our ability to connect breakthrough discoveries with clients' requirements. In such an environment, we find the classic stage-gate process very appropriate.

At corporate level, we work on some longer-term and riskier projects and technology platforms. This is a challenging risk/reward management, given our work could deliver a major success or absolutely nothing.

Corporate R&I also focuses on multi-GBU projects, which can be more complex. For example, battery research requires resources around polymers, electrolytes and coupling systems, with competencies spread across several GBUs.

This department also manages investments in start-ups through VC funds (e.g. Capricorn Venture Partners and Aster Capital). We find this very useful in helping to recognize new trends early on and connecting with entrepreneurs.

Last but not least, corporate R&I assesses the quality of our scientific and technology resources and people. Our decentralized model requires us to keep an overall view of capabilities, such as chemical modelling (i.e. how to "build" a chemical molecule). Its role is to identify what we have, where, and to balance it with our needs.



*“Digitalization – as an enabler – triggers continuous improvement rather than breakthrough development”*

**Arthur D. Little:** What is your experience of the transformation at Rhodia and Solvay?

**Jean-Pierre Clamadiou:** Both were very different. At Rhodia, transformation was an absolute must and understood by everyone in the company. At Solvay, it was necessary at first to build the momentum and convince about the necessity to change.

Looking at the timeline, the Solvay-Rhodia integration went relatively quickly. The deal closed on 1st October 2011, the integration process started at the end of 2011, and it was declared completed (at a high level) on 1st January 2013. From then on, we began transforming Solvay. This transformation still offers many opportunities in terms of portfolio upgrade and operational excellence. This is why we will continue this strategy. Many of the benefits of our excellence programs, for example, are just becoming visible, and we still have 300-400 ongoing projects.

As for the current integration of Cytec, we believe it can be achieved even faster than with Rhodia – we have, in fact, started to prepare the integration two months before closing, and it started the following day.

**Arthur D. Little:** To what extent is digitalization an opportunity for Solvay?

**Jean-Pierre Clamadiou:** As President of CEFIC, I observe that – behind the buzz around “manufacturing 4.0” and other new concepts – we are still trying to understand what digitalization really means for our industry and how disruptive it can be. The chemical industry is already quite advanced in terms of automation of its industrial processes. Therefore, I do not expect that digitalization will revolutionize our processes, unlike in other domains. Digitalization – as an enabler – triggers continuous improvement rather than breakthrough development. When it comes, for example, to preventive maintenance, our existing practices have evolved from manned tours of the factory to remote digital sensors. This has helped to increase quality and speed, to better focus time on tasks that add value, but it is no major disruption.

Things are different in other areas: there is much greater potential for disruption when it comes to communication and collaboration, particularly towards and with our clients.

There are also possibly breakthrough R&I projects that we are working on at the moment. I can think of one client development that combines several technologies, such as 3D printing and big data, which offers the potential to manufacture items in a decentralized way.



**Arthur D. Little:** As a conclusion, what lessons learned would you like to share with other leaders on this anticipate-innovate-transform journey?

**Jean-Pierre Clamadieu:**

- 1) To have a crystal-clear vision is critical. As the ultimate source of this vision, I have to make time to share it with many people inside and outside the company.

I adapt the emphasis for each audience to make it relevant to them personally.

Ambiguity should be avoided. When something is not clear, it inevitably backfires, even if it is some years later. Ensuring clarity around this vision also requires spending time with external stakeholders to give me different perspectives.

II) Pay attention to different cultures, even (especially!) when they appear to be similar.

Even though Solvay and Rhodia were close in many ways, such as being technology and engineer driven, we faced some differences between the French and Belgian management cultures. The breakthrough was when we started to mix the teams.

III) Go fast when integrating two companies.

As already mentioned, we have started the integration of Cytex into Solvay on day one; this allows ensuring business continuity, and quickly eliminating uncertainty, securing key talents and delivering synergies.

IV) Learn from your mistakes.

As entrepreneurs, we all make errors and should acknowledge them, in order to learn lessons for the future.



Picture by Didier Vandebosch - Solvay photolibrary

## Jean-Pierre Clamadiou

**Chairman of the Executive Committee and CEO**

Jean-Pierre Clamadiou began his career in France in the Ministry of Industry and as a technical advisor to the Minister of Labor. He joined Rhône-Poulenc in 1993, where he held several positions, including President of Rhodia Chemicals Latin America, President of Rhodia Eco Services, Senior Vice-President Corporate Purchasing, and President of the Pharmaceuticals & Agrochemicals Division.

He was appointed CEO of the Rhodia Group in 2003 and Chairman & CEO in 2008. After the merger with Solvay, he became a member of the executive committee in September 2011 and CEO in 2012.

He holds a degree in engineering, awarded by the Ecole Nationale Supérieure des Mines de Paris. Jean-Pierre Clamadiou also holds seats on the Boards of Directors of Faurecia and Axa.



Picture by Solvay / JM Byl

**Ignacio Garcia Alves**

is Arthur D. Little's Chief Executive Officer and located in the Brussels office.