CHEManager EUROPE

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THE NEWSPAPER FOR THE CHEMICAL AND LIFE SCIENCE MARKETS

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Game changers that enable chemical firms to outperform peers in a volatile market.

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What does launch excellence mean for pharmaceuticals today?

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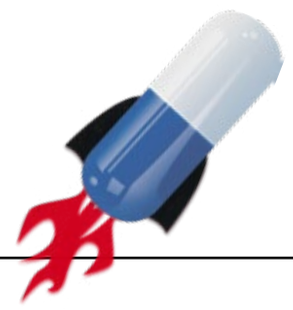

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Bridging the Gap

Newly Formed Addivant Wants to Bring Additives up to Speed

New Beginnings – After SK Capital Partners wrapped up its acquisition of Chemtura's Antioxidant and UV Stabilizer business in May, the newly formed company, Addivant — a name uniquely chosen by the company's employees — was able to hit the ground running. Lead by CEO Peter Smith, a former member of Chemtura's leadership team and general manager of the business unit since 2009, Addivant has come onto the field bolstered by a 60 years heritage of Uniroyal Chemicals, Great Lakes, GE Specialty Chemicals, Crompton and later Chemtura, and yet enjoys all the trappings of a young and flexible company. In an interview with Brandi Schuster, Smith outlined his vision for the company and discussed the gap between today's high-performance polymers and additive performance.

CHEManager Europe: You've compared the founding of Addivant to a white piece of paper. How easy is it to embark on a fresh start with 60 years of history behind you?

P. Smith: It's a very exciting proposition. As a new standalone company, we have been able to define how we want to operate: our culture, values, and strategic direction. At the same time, we have been able to leverage our 60-year heritage and all the benefits it brings with it: highly valued customers and suppliers, and a global, highly trained workforce.

What are your expectations for the company's first year?

P. Smith: If I had had one wish, it would have been to start the new company in an economic environment where the demand was growing and where customers were looking for new business. The reality is, however, that these are currently challenging economic times, so we have to approach our first year with pragmatism. Our expectation for the first year is to fulfill our financial goals and to meet all of our customers' expectations. We want to embark on a program of continuous improvement, driving operational efficiency to further improve our competitiveness. At the same time, despite the slowdown in the economy, we have made the strategic decision to further accelerate our R&D investment.

How important is R&D for your company?

P. Smith: It is a differentiator for us. There has been a lot of exciting innovation going on within the global polymer industry, but up until now the additive industry has been lagging behind. In fact, additives used by most polymer producers haven't changed in 50 years. About five years ago, we realized there was a gap between our customers' innovation and additive performance and we began to invest heavily in R&D to meet the gap between the polymer industry's needs and the current performance of additives

How big is the gap right now between reality and "could be"?

P. Smith: It's quite sizable. For example, polyolefin producers today are manufacturing very high-performing materials to meet the requirements of their customers who are operating in demanding applications. The film application is such an example. Today's films are becoming thinner yet require more durability.

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Peter Smith, CEO, Addivant

Building a Business From Scratch

Korea's Songwon is Now World's Number Two Polymer Stabilizers Producer

Maurizio Butti, COO, Songwon

Brand New — Eight years ago, the family-owned Korean additives and specialty chemical producer Songwon made a bold decision to pursue a new strategy for extending the company's focus beyond Asia, the region it had supplied primarily since its founding 40 years earlier.

In what may have been a stroke of fate, the coinciding merger of U.S. additives players Great Lakes and Crompton into Chemtura unexpectedly provided the catalyst for the transformation process. Unhappy with the assets merger, senior global executives of the former Great Lakes made bold decisions of their own, opting to leave their high-profile jobs and apply their talents and their knowledge of products and markets to shaping a new major player.

The Korean company's ready-made management team wasted no time in developing what its members saw as a workable plan and putting it into place. As polymer stabilizers were the field in which Songwon had solid strengths, "this became our focus and our basis for growth," says Maurizio Butti, now chief operating officer (COO).

At the time, the plastics industry was in the process of consolidating into bigger entities and looking for a second major supplier, explains the Italian native who had served as executive vice president in charge of Great Lakes' polymer stabilizers business. "Here," he says, "we saw the opportunity to become number two, and we knew that Songwon had the strength to accomplish it."

What the Asian newcomer to the global marketplace needed, Butti and the other team members understood, was a larger capacity and a flexible approach that would make it more agile than some of the industrial giants. Under its new leadership, the once small regional producer specialized in toll production was transformed in less than a decade into the world's second largest producer of polymer stabilizers, behind BASF and ahead of Albemarle and Clariant.

The Ulsan-based company controlled by a branch of the Park family meanwhile has 17 affiliates in nine countries worldwide, including Korea. Two are joint ventures. In China alone it has three companies. Other bases are in India, Japan, the Middle East, North America and Europe — where Switzerland is the seat of the international holding.

New Strategies

Embarking on its new journey in 2005 with annual sales of only $230 million, mostly in Korea, by 2012 Songwon — which specializes in antioxidants and UV stabilizers — had increased its sales to nearly $640 million. The current plan is to grow sales by 10% annually to reach $900 million in 2015. The pillars of future growth should include an optimized portfolio emphasizing application-driven solutions and further expansion in the Middle East, India, China and South America, in particular Brazil.

One of the first steps in the strategy devised by Butti and his team for Songwon was to end all relationships with its major distributors and market the company's products directly. Subsequent moves saw the scale-up of existing production facilities and the building of new capacities to grow parallel to plastics industry customers. In 2007, the Korean firm made its first major investment in its internationalization initiative, spending $120 million on a new plant for polymer stabilizers in Maeam, Korea. Later it added 15,000 t/y of antioxidant capacity at Ulsan.

Now fully engaged in the next strategic phase of its expansion drive, the COO says Songwon is "starting to do something that Korean companies traditionally never tried to do, grow through joint ventures and acquisitions." With its new industrial partners, it is building up a substantial presence in its markets.

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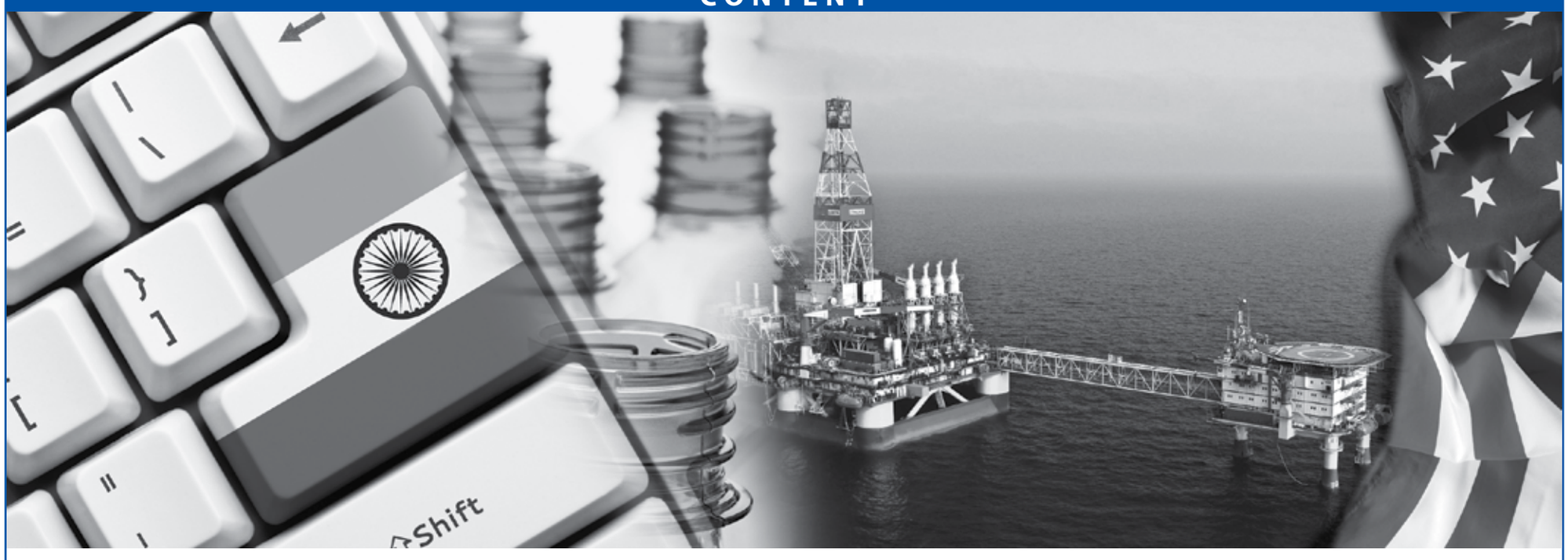

Syngenta Contests EU Move to Restrict Thiamethoxam

Switzerland – Swiss agrochemicals giant Syngenta has filed a legal challenge to a decision by the EU Commission (EC) to restrict application of thiomethoxam, one of the active ingredients in pesticides and seed treatments used on bee-attractive crops. The group said the EC's decision was "based on a flawed process, an inaccurate and incomplete assessment by the European Food Safety Authority (EFSA) and without the full support of EU Member States." At the end of April, the Commission pressed ahead with plans to restrict use of a number of neonicotinoid-related products for two years — from December 2013 — due to fears they may be at least partly to blame for the decline in bee populations known as Colony Collapse Disorder (CCD). The European action, made possible by rules that allowed the Commission to proceed without a weighted majority vote, is the world's first continent-wide suspension imposed on widely used insecticides.

John Atkin
COO, Syngenta

"We would prefer not to take legal action but have no other choice given our firm belief that the Commission wrongly linked thiamethoxam to the decline in bee health. In suspending the product, it breached EU pesticide legislation and incorrectly applied the precautionary principle," said John Atkins, Syngenta's chief operating officer. (dw) ■

Akzo Nobel to Close Five German Offices in Streamlining Move

Germany – Akzo Nobel has said it will close five of its eight corporate offices in Germany by summer 2014 as part of a streamlining scheme that foresees divestment of its Building Adhesives business unit and the German retail facilities of its Decorative Paints unit.

Offices in Börnsen, Düren, Essen, Hanover and Ludwigsburg will be closed and the German headquarters moved to a new site in Cologne. Sales offices serving the northern and southern parts of the country will be consolidated in Hamburg and Stuttgart.

Altogether, the closures will reduce the German workforce by more than 25% to around 2,600, the Dutch paints and coatings producer said, noting that "this highly fragmented footprint" is the result of mergers and acquisitions. In August, said it would sell the building adhesives business to Swiss-based Sika.

Werner Fuhrmann
member of Akzo Nobel's executive committee

Nearly two-thirds of the unit's 550 jobs are based in Germany.

"By bringing office-based management and supporting staff together in fewer locations and better aligning them with the needs of our businesses in Germany, we aim to improve our operational effectiveness as well as lowering overheads," said executive committee member Werner Fuhrmann. The need to further streamline the company's organizational structure in the neighboring country "has become increasingly clear in light of recent developments," he added. (dw) ■

Dow Appeals $1.1 Billion Isocyanates Cartel Fine

U.S. – Dow Chemical has asked the U.S. 10th Circuit Court of Appeals to overturn a $1.1 billion fine imposed by a district court in Kansas City, Kansas, in connection with an alleged price-fixing cartel for polyurethane feedstocks MDI, TDI and polyester polyols.

In February of this year, a jury slapped the U.S. chemical giant with a fine of $400 billion, and reports say the court took advantage of U.S. monopoly laws allowing the penalty to be tripled. Some $140 million was subsequently shaved off the end figure.

In a note to the court, Dow, the only player to go to court in the suit brought by customers in the foam industry and covering the period 1999 to 2004, pointed out that it had consistently denied any wrongdoing.

The other isocyanates producers investigated — BASF Corporation, the U.S. arm of Bayer MaterialScience and Huntsman — accepted fines in the double-digit dollar range. LyondellBasell, which was in Chapter 11 insolvency proceedings at the time, paid nothing.

Downstream of the alleged isocyanates price fixing, some of the foamers involved in the suit were themselves embroiled in cartel proceedings. (dw) ■

Versalis Partners with Neville Ventures on Hydrocarbon Resins

Italy – Versalis, the chemicals subsidiary of Italian energy and petrochemicals giant Eni, has signed a strategic agreement with U.S.-based Neville Ventures to produce hydrocarbon resins at the Italian company's Priolo, Italy, site. The U.S. firm based at Pittsburgh, Pennsylvania, is a joint venture of hydrocarbon resins producer Neville Chemical and engineering and technology provider GTC, both of the U.S. GTC will provide the license for producing the required feedstock.

The hydrocarbon resin products, which are said to offer synergies with the elastomers business, will be used in applications such as adhesives, inks, coatings and rubber, Versalis said, adding that the partnership is an important step in the restructuring of the Priolo site. The resins production will allow it to "make the most" of the ethylene cuts produced by the on-site cracker. The Italian company points to a "promising market" for the products in Europe. (dw) ■

Clariant Forms JV with Tasnee in Saudi Arabia

Saudi Arabia – Swiss specialty chemicals producer Clariant has agreed to form a joint venture with Saudi Arabian industrial conglomerate Tasnee to produce masterbatches in the Middle East country. To this end, Rowan National Plastic, a wholly owned Tasnee subsidiary, will acquire a 40% stake in the Swiss group's local production company, Clariant Masterbatches (Saudi Arabia), based at Riyadh.

Claraint said the joint venture's portfolio will include black- and white and color masterbatches as well as additives. A new production facility for white masterbatches is planned to be built at an as yet undisclosed location by 2015. Clariant already supplies masterbatches to Rowan's plastics processing sites at Riyadh and Dammam, in Saudi Arabia's oil-rich eastern region. (dw) ■

Ineos Threatens to Quit Grangemouth Over Shale Gas and Labor Costs

Scotland – Ineos chairman Jim Ratcliffe has threatened to close the now Swiss-based petrochemical group's operations at Grangemouth, Scotland — where it operates two crackers, a polyethylene plant and a polypropylene plant — if it does not win concessions from the UK government and the site's unions.

In an interview with Financial Times, Ratcliffe said, "Grangemouth needs cheap feedstocks and a sensible cost structure. If we can't resolve these issues it would need to shut down." The Ineos chairman has been critical of the government for its perceived foot-dragging on shale gas and the unions for failing to accept a reduction of pensions.

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The group, which moved its corporate headquarters to Switzerland in 2010 for tax purposes, is currently in discussions with UK authorities about financial backing for a shale gas terminal at the Scottish production site, similar to the one it plans to build at Rafnes, Norway, by 2015. (dw) ■

Conscience In Chemicals

Chinese Chemical Industry and Environmental Protection

Getting Serious About Pollution? – According to a report by the World Health Organization, seven of the 10 most polluted cities in the world are in China. Depending on the method used, it is estimated that Chinese gross domestic product growth would be 2% to 3% per year lower if environmental pollution were to be taken into account. However, the development of an urban middle class has boosted the environmental consciousness of an important part of the population substantially in the past few years.

Dr. Kai Pflug
CEO, Management Consulting

The chemical industry is by far not the only reason for environmental pollution — this would be the burning of coal followed by increasing car traffic and others. Moreover, as in Western countries, the chemical industry often gets a large share of the public attention because of the localized nature of its pollution and the public's unfamiliarity with chemical processes (compared with, for example, the burning of coal). So how does the recent rise of environmental concerns in China affect the chemical industry?

China is not a lawless place at all. In fact, many rules regarding chemicals have long been in place, including occupational exposure limits for hazardous chemicals, regulations on safe management of hazardous chemicals, safety rules for classification, precautionary labeling and precautionary statements of chemicals as well as restrictions and prohibitions for the import and export of specific chemicals.

However, in the wake of the current 12th Five-Year Plan, these rules have become tighter and are enforced more strictly. The plan includes a number of targets relating to environmental issues, with the aim of achieving sustainable industrial development. Implementation of these ambitious goals specifically focuses on the chemical industry (among others). For example, the current Guiding Catalogue for Foreign Investment Industries encourages foreign investors to invest in 60,000 t/a or more non-phosgene polycarbonate (PC), polyoxymethylene (POM), polyamide and other engineering plastics, all of which are seen as materials with environmental benefits (engineering plastics can replace metals in automotives, reducing their weight and consequently their fuel consumptions). At the same time, the catalog restricts other, less beneficial processes, for example, PVC production via the acetylene process.

Lighter Footprints

A clear trend also can be seen in the acceptance of chemical production in or near bigger cities, probably at least partly a consequence of local protests, such as those against production of p-Xylene in Xiamen, Dalian and Kunming. In eastern China, particularly in Shanghai, many industrial parks already reject chemical projects, thus avoiding local protests and moving toward more knowledge-oriented economies with lighter environmental footprints. Some established parks such as Suzhou Industrial Park do not allow chemical projects within their premises. While there are chemical projects in Shanghai, they are increasingly confined to areas such as Shanghai Chemical Industrial Park in Jinshan. But even there, not all chemical projects are welcome any longer — a major specialty chemicals producer that already runs production in Jinshan will have to move to Ningbo as the Shanghai authorities did not give permission to expand production in Jinshan. Even in emerging cities such as Changshu, the mainstream industrial parks will increasingly move any chemical projects to specialized parks further from the city center.

Increasing Regulations

In addition, there is a large body of regulation for individual chemicals and chemical production processes, all of which may affect specific subsegments of the chemical industry. Examples of changes toward more sustainable practices:

- Demand growth for dimethylformamide (DMF) has slowed down partly because of increased recycling of the chemical as a consequence of environmental regulation. In a second step, downstream industries such as fiber producers are now replacing DMF with an alternative, dimethylacetamide (DMAC), further reducing DMF demand growth.
- Aqueous glyphosate solution with content below 30% was banned by China. As this low-concentration solution was used as an outlet for production waste, the ban resulted in higher environmental protection costs for glyphosate producers. As in many other cases in China, the stricter regulation also led many smaller companies with outdated equipment to quit the market.
- In coatings, the popularity of environmentally friendly varieties such as waterborne coatings is increasing, also leading to an increase in average price per kilogram as the newer materials are more expensive.
- Soda ash production has become more environmentally friendly as several producers using the Solvay process have started using waste residues to desulfurize boiler flue gas.
- Consumption of trichloroethylene for metal cleaning has been reduced because of increasing pressure for environmental protection.
- Coal-to-oil (CTO) projects, while overall probably not particularly environmentally friendly, have at least been restricted by the National Development and Reform Commission (NDRC) to some extent by establishing a minimum capacity of 500,000 t/a, and by fixing a maximum consumption rate of fresh water.

Below these general developments, there are frequently highly specific and technical targets, for example for PVC production (2012 government targets):

- Low-mercury catalyst to be used in 50% of its calcium carbide-process PVC capacity
- Reduction of mercury use by 208 tons per year; recovery of all waste mercury catalyst
- Use of hydrochloric acid deep desorption technology into more than 50% of its PVC capacity
- Reduction of calcium carbide slag discharge by 12.58 million tons
- Reduction of wastewater discharge by 39.9 million tons
- Reduction of COD emissions to 5,770 tons a year, or down by 13,460 tons

Rules Vs. Reality

These are the official rules — but what does reality look like? For multinational companies in China, compliance with chemical legislation is not always straightforward as the regulations are often not very transparent and only available in Chinese. Still, the high level of scrutiny directed at foreign companies and the limited upside of employed managers who break the rules lead to these companies generally being very compliant with regulation.

A bigger problem derives from smaller local, often privately owned companies. These often have substantial influence on local government and thus the enforcement of environmental legislation. Every manager of a Western chemical company has examples of a local competitor not playing by the rules but finding cheaper alternatives, e.g., regarding waste disposal or emission of toxic gases. Local authorities seem to be more tolerant of these violations, probably less because of limited awareness and more because of the perceived tradeoff between employing a considerable workforce and complying with costly regulation in low-margin, low-scale businesses.

Environmental pollution of this type will probably continue for some time, though general trends in the chemical industry toward higher quality and larger production capacities will also gradually reduce these practices. It is a common phenomenon in China to have a time gap between laws being announced and being actively enforced — but once the regulations are there, it is mostly a question of time until all market participants have to follow the rules. In the long run, this will favor both multinational companies and larger domestic companies as they have the knowledge and capital to follow the local regulation.

Overall, it seems justified to be cautiously optimistic about improving environmental protection by the chemical industry in China. Similar to the past development in Western countries, at some point a level of wealth is reached at which the perceived benefits of growth no longer outweigh the costs of environmental pollution. In rich areas of China, such as around Shanghai, this point is being reached.

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Bridging The Gap

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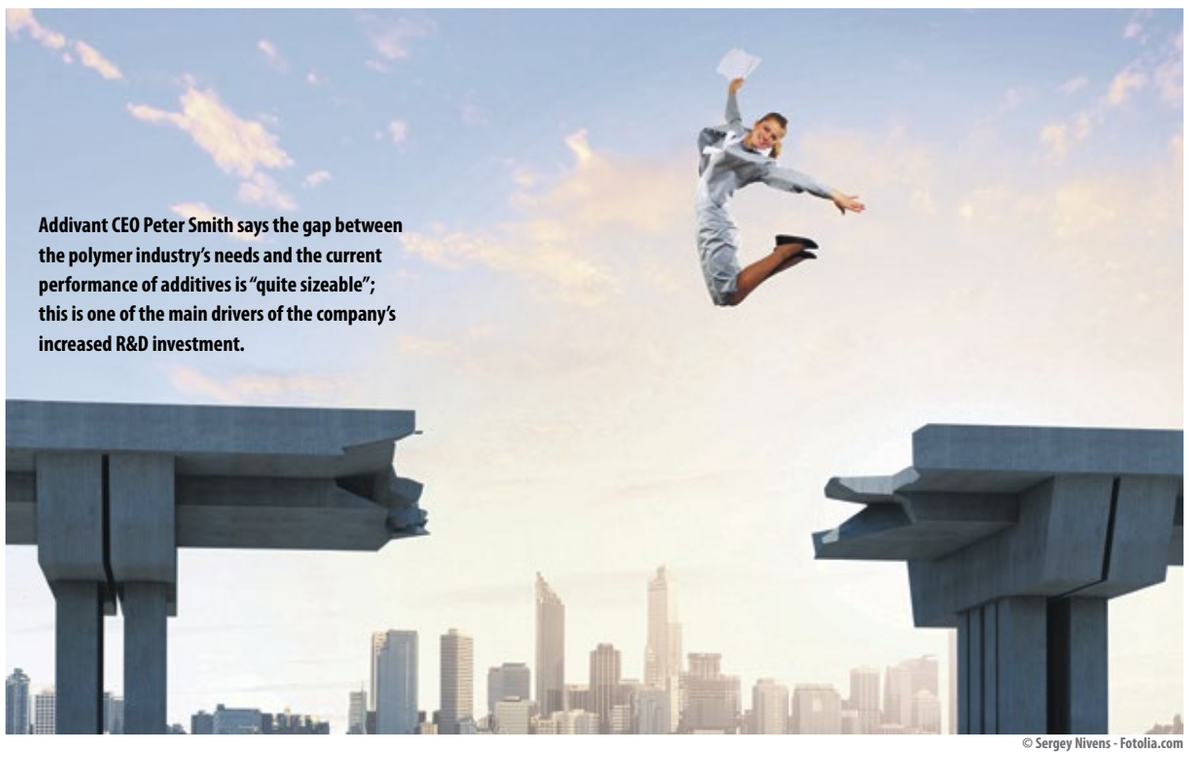
To meet these requirements film producers are using combinations of different polymers in multi-layer structures using the latest in co-extrusion technology. This is enabling the creation of films with unique functionalities. This same co-extrusion processing equipment can run at faster and faster speeds, which offers significant manufacturing productivity. However, both of the major improvements are being held back due to the limitations of some of today's additives.

For example?

P. Smith: There is a tendency for certain types of additives to "bloom," which means they migrate to the surface of the plastic structure. Once that happens, the additives can crystalize and again in some cases form a powder which can agglomerate at the die of the extruder and eventually "fall-off" on to the extruded part. This severely impacts the productivity of the equipment as it has to be shut down to clean off the buildup of additive residue to prevent any contamination to the plastic material. Addivant has recently developed a family of new additives with better solubility and that don't cause build up on the extrusion die, allowing the film producers to use their high-performance extrusion equipment to their full potential and optimizing the return on investment.

What are some other problems with today's run-of-the-mill additives?

P. Smith: In the recent past polyolefin plants had capacities of around 100,000 tons per annum. Now it's half a million tons per year. This places higher demands on additives. At the same polymers are being engineered for higher performance often replacing conventional materials such as metal, glass and wood. All of these necessities place a greater demand on the polymer often requiring multiple additive solutions. An example can be found with the new polyethylene where materials are being produced with a narrow molecular weight; they have stronger properties, higher tear strength, tougher impact, etc. But this same narrow molecular weight makes it more difficult to process the polymer requiring more energy and heat in the extruder, which can lead to oxidization. A high-performance additive can protect the polymer during this process and allow the new, innovative polymers to perform to their full potential in the applications for which they have been developed. I consider additives to be enablers, allowing the polymer to perform not only during the processing, but also in its end application. We work to identify what a polymer is capable of doing and how we can creative additives to bring that promised value.



Addivant CEO Peter Smith says the gap between the polymer industry's needs and the current performance of additives is "quite sizeable"; this is one of the main drivers of the company's increased R&D investment.

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A logical question here would be about how your company plans on getting up to speed with the competition, but it sounds as if you're confident that Addivant is already ahead of the game.

P. Smith: Correct; even before the recent formation of Addivant, we had a longer heritage in additives than any other company, and we've been able to take advantage of that.

What are the benefits of being a stand-alone company and no longer a part of Chemtura?

P. Smith: Employees from all parts of Addivant have been encouraged to come forward with new ideas for improvement, which everyone has found to be very empowering. Today employees are challenging the status quo and making decisions faster than before. As a smaller company, we can identify an issue at 9 a.m., discuss it at 10 and make a decision and implement it by 11 a.m. We are empowering people to make decisions, and the real benefit from that is speed. It allows us to develop our products faster and service our customers better.

You serve many different markets, from automotive to agriculture. In which markets do you see the most potential, both short and long term?

P. Smith: Within the different markets, it's important to think globally and remain close to the key megatrends. For example, we expect the packaging industry to pick up speed in terms of growth; with the population moving more toward urban areas, food must travel quite a distance while retaining freshness, regardless of season. And that industry is looking for solutions that meet the latest and highest standards in regulatory requirements. There is a need for new additives that allow food packaging to perform to the highest expectations, but that also conform to all the new regulatory requirements that are cropping up.

This is also the case with the distribution of electricity, which is also becoming an increasingly important market. When we consider servicing the urban centers of emerging countries with power, we have to take into consideration the fact that those products will have to perform for at least 30-40 years buried under the ground. Any material failure could have dire consequences; this is where we have to be able to ensure not only our customers, but also our customers' customers, that these systems are totally reliable.

Addivant has locations in some of the fastest growing petrochemical regions in the world. What are the advantages for an additives producer to be located in close proximity to the petro industry?

P. Smith: We are truly a global company; we manufacture in five continents around the world, whereas many of our competitors are single-continent or even single-country based. Specifically, in terms of the petrochemical industry, China now has the largest industrial manufacturing base; as a result, we've seen tremendous growth in polymer production there. The second market we've watch grow has been the Middle East; we expect that about 20% of the global petrochemical industry will come from there by 2022. The third area is North America, particularly with the shale gas boom. As a result, we expect to see a great deal of growth in the petrochemical industry there in the next decade.

Why is this important to Addivant?

P. Smith: We're the only producer of antioxidants in the Middle East. We also have plants in Taiwan and Korea to service the Asia-Pacific region, particularly the Chinese market. And of course, North America is our historical home, and we have a large manufacturing base there as well. When we are in close proximity to our customers, we can do two things: We can deliver quickly and efficiently and, most importantly, we can customize our products and develop solutions to a company's specific requirements. In essence, our strategy is to leverage our global manufacturing clout to provide custom services to our customers.

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Building an International Business From Scratch

Continued Page 1

Acquisitions, Joint Ventures and Increased Capacities

Important milestones achieved so far include the 2011 purchase of Germany's Additive Technology Greiz, a producer of dust-free polymer additive packages marketed as One Pack Systems (OPS). The company founded only five years previously had been looking for a globally oriented industrial partner to support the products' growing popularity.

The pre-packaged additives save polyolefin producers cash, Butti says — in particular as they eliminate waste and optimize storage space. One of the selling points for OPS is its innovative technology that allows formulations to be adapted to climate and storage conditions. Because of the climate factor, the systems are popular in the Middle East. OPS are also being used increasingly in Europe. The idea has not taken off as well in the U.S.

In 2012, Songwon doubled output capability to 14,000 t/y of OPS products now sold under the Songnox trademark. It is planning to increase capacity again, in cooperation with Pan Gulf Group of Saudi Arabia and Abu Dhabi-based Polysys, its partners in the joint venture Songwon Additive Technologies. In March of this year, the joint venture brought on stream a new 7,000 t/y U.S. plant at Houston, Texas. A second 7,000 t/y unit is due to start up in Q1 2014 at Kizad, Abu Dhabi.

Another deal Butti regards as crucial to Songwon's forward expansion was the establishment of a joint venture for thioesters with China's largest player, Tangshan Baifu Chemical. The joint venture, now trading as Songwon Baifu Chemicals, has upgraded capacity for the antioxidants "several times," Butti says. The most recent upgrade, in 2011, widened output to 8,000 t/y.

To leverage its technology base and meet customer demand for innovative products used in outdoor polyolefins applications such as automotive, fibers and film, Songwon in October 2012 entered a long-term distribution partnership with hindered amine light stabilizers (HALS) producer Sabo, based in Levate, Italy. A new plant due on stream in this year's third quarter will substantially increase capacity of the fully back-integrated producer.

Investing In New Capacity

Especially when deciding where to invest in new production capacity, chemical industry suppliers have to take the pulse of their customers. The current state of the global plastics industry is "not exceptionally good, but not that bad, either," says Butti. We expected weaker demand than we are now seeing."

Europe's two major markets of Germany and the Benelux are doing well, while Italy, where the plastics processing industry is dominated by small- and medium-sized companies, is "in bad shape." Outside Europe, the U.S. "is not doing all that badly," while the Indian market continues to grow, and "China is improving."

A choice of location for Songwon's forthcoming major expansion of antioxidant production is especially crucial, and is requiring more intensive study than initially expected. The company first looked at extending capacity in Korea, where Butti says "we have all the utilities we need." From this perspective, he says, "this could still be the best place to build, but strategically it may not be."

If asked two years ago, the long-time industry manager muses, "I would have says we'd probably build the plant in the Middle East, or maybe China. But the emergence of shale gas as a light feed for polyolefin production, "has made the U.S. look interesting again."

Putting environmental issues associated with exploration aside, "if prices for gas feedstocks in the U.S. are as low as they are claimed to be," Butti says, "this could be the most attractive place to build." It could be more economical than the Middle East, where natural gas prices had long been a third lower than in North America and the polyolefins market growing by a high double-digit margin.

It's "important to understand the impact of the shale gas factor," the Songwon manager emphasizes. One aspect is that this light feed is used mainly to produce polyethylene, as the process for polypropylene is more expensive. For PE, one type of antioxidant is needed, for PP another — a factor crucial to the company's decision.

"Rushing in with an investment, could lead to mistakes," Butti acknowledges. "Fortunately," he adds, "we don't have to make a hasty decision. We can allow ourselves a couple of years' time."

Framework for Future Moves

Another point Songwon will have to ponder when making new investment is the state of the European polypropylene market. As the region has many small and uneconomical PP plants, some of these may be shut down or replaced with larger facilities. All of this could change the playing field.

To lay the framework for future moves, the company is now starting to look intensively at its existing portfolio. Around 40% of its production, worth around $300 million, has no connection to the plastics sector. These businesses could be grown, restructured, partnered or sold, but no timetable for action has yet been set. A portfolio review could take up to a year.

"The businesses are all clearly defined," Butti remarks, "and they are making money. We are analyzing each of them to determine where we will focus our attention for the future. Should we decide to exit some of those, they could all potentially have different interested parties."

In any case, Songwon plans further growth in polymer stabilizers, and proceeds from divestments could fund the expansion.

"I don't like an unclear position in a business," says the executive, pointing to his background in American business. "You either believe you can play a major role in the market and so you stay in or you get out."

Looking back at the recent accomplishments of the Korean additives producer, Butti says that, although the going was fairly rough at the outset, with a global presence established, "I think we are doing well. In contrast to a few years ago, "everyone knows who Songwon is."

Dede Williams, CHEManager Europe

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One Pack Systems (OPS) are popular in the Middle East due to the climate factor; they are also being used increasingly in Europe, but less in the U.S.

New Blood

Recruiting Young Talent in the Chemical Industry

Skill Pool – Securing steady inflow of "new blood" to the market is key to long-term sustainable growth. Access to diverse and skilled pools of technicians, engineers, managers and support staff is vital for successful industry expansion. The chemical industry is certainly facing the difficulty of attracting professionals, and it is important to promote a positive image to the new generation of professionals.

Natalia McDonagh
Marketing Manager, Cornelius Group

Public perception of chemical industry has gained positives recently (Pan-European Survey, Cefic), with an average score of 56.5 in the UK, while a number of industries such as IT and finance are facing recruiting difficulties. The banking industry's reputation is damaging its ability to recruit graduates, Lloyds CEO António Horta-Osório once said. Promoting a positive image requires consistent cooperation between governments and key stakeholders, including industry players across the supply chain — such as chemical producers, distributors, logistical partners and end-product manufacturers.

Trends in the Industry Sector

Some sectors are more attractive than others in terms of perceived career opportunities. The majority of graduates within the chemical industry at the moment tend to be entering into more buoyant markets such as the oilfield, oil and gas, and mining industries, where graduate schemes tend to be well marketed and advertised.

Likewise, graduates are more likely to be aware of opportunities with global manufacturers rather than distributor companies. The chemical distribution sector struggles to attract young talent due to various reasons: misconceptions on lack of career opportunities; poor brand image; little or no knowledge of what it is like to work in the sector, etc. Textiles and industrial coatings are perceived as having little or no progression and growth opportunities and a significant drop in activity across Europe due to production plants on shut down or moving to locations such as the Asia Pacific.

Is it possible to identify a typical industry newcomer? A lot of talent within the chemical industry tends to be graduates who move into technical positions from chemical-related degrees; only after five to seven years of experience will they move to a chemical distributor in order to enable career progression and personal growth.

"Most graduates start work within a year of completing their primary degrees; they are typically in their early 20s. If they go on to a post doc first, they usually enter the workforce in their mid-20s," said Laura Merritt, director at Whitehall Recruitment.

Natalie Kaye, senior consultant at Mackenzie Stuart, recommends that individuals entering the chemical market tend to adopt one of the following approaches:

- Join an independent laboratory; a new recruit could give insight in sampling and testing of fluids from the industry and quickly has the scope to be involved in offshore visits.
- Join a chemical vendor; two initial routes are possible, either as a development chemist in a technical team in the lab or as a service chemist performing trials and optimization of chemicals in the field.
- Join the sales team within a chemical vendor; here, newcomers could either work directly with the customers onshore as an account manager or with the offshore customers as a platform chemist in a full time position.

The gained experience should then allow for the opportunity to join either an operator or one of the now many consultancy firms as a production chemist.

Finding a self-starter with strong commercial acumen is certainly a challenge; technical excellence does not guarantee success in gaining sales orders. Even for the most technical of positions, it is not just about a science degree — it also personality, varied management skills and ideally some industrial experience. The chemical industry cannot leave it to schools and universities alone to develop commercial awareness of their graduates. In order for companies to benefit, working in partnership with educational bodies is necessary; this could include regular work placements for students or working with academics on developing vocational courses that would further develop the skills of future employees.

High Caliber Graduates Will Pick And Choose

How can companies make sure to be the first point of call for the new generation of innovators?

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A company's corporate communications department is of vital importance for attracting high caliber recruits. Distributors would be well advised to invest resources to develop efficient brand communication programs. Companies on the ICIS Top 100 Chemical Distributors list receive a steady flow of the best candidates. Why? Because of their recognizable brand names.

It is also important to know how to target potential employees — advertising on job boards, in local universities, in science journals and industry publications are all good places to do outreach. Social media provides a powerful medium for reaching today's generation of professionals: Companies would be well advised to develop their LinkedIn, Twitter, Facebook, blogging and other social media channels.

Responsible Care: What's In It For Me?

Many companies incorporate social responsibility into their business strategy. But only a few turn this concept into their main differentiating claim, both for targeting their customers and exceptional professionals.

- Responsible Care contributes to sustainable development, benefiting not only environmental and social aspects but also delivering numerous business benefits. Communicating your corporate social responsibility (CSR) policies to wider stakeholders can provide a meaningful strategic differentiator and a superior alternative to the "green" positioning. Positioning a brand as green is often not enough to generate economic value — and would be difficult to apply this concept in a purist B2C meaning, especially for the chemical industry.
- Social-responsibility resonates with every member of our society, no matter the role in the economic chain. Socially responsible marketing builds positive perceptions with the company's suppliers, distributors and final consumers.
- According tostudy by Cone, 79% of millennials (born between 1982 and 2002) want to work for a company that contributes positively to society.

The motto here is do good — and talk about it. Companies need to make sure local communities, universities, schools, technology and R&D bodies know about their commitment and work in this area. CSR is at the heart of chemical distributor Cornelius' culture and a strong differentiator on key accounts. It is a great way to differentiate from competition — and to attract newcomers. A high percentage of the company's employees are under the age of 30, and they are the true ambassadors of the social responsibility at the company. There are a number of business benefits generated from Cornelius' commitment to CSR practices. Retention of staff, brand exposure through public profiling in local and national press, development of business through differentiating angle — all of which translate into the bottom line profitability.

Once You Gain — Retain

Distributors can find it difficult to retain young people if they begin their careers fresh out of school. This is because many cannot compete with the career development opportunities that many large and multinational chemical manufacturers offer. However more small and mid-sized enterprises realize that offering training and career development is essential. For example, Cornelius has a distinct Cornelius culture, putting great emphasis on motivation and giving employees opportunities to improve their qualifications and take part in further training programs.

To gain the most out of new recruits, companies must train and develop their graduates. Schemes and sponsorships for holiday and industrial work placements put in place by a company makes an offer more attractive to graduates actively seeking to develop their career. Companies should also offer incentives to stay with the company through performance bonuses and regular salary increases. Last but not least, new recruits should be kept up to date with new technology through conference attendance, seminars and university projects.

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Bayer Plans 80% Sales Increase in Russia by 2017

PORTFOLIO CEO Dekkers Expects 'Significant' Growth

Bayer is targeting an 80% increase in sales to €1.3 billion over the five-year period up to 2017, CEO Marijn Dekkers said at a press conference in Moscow. At the same time, the German chemicals, pharmaceuticals and plastics group intends to increase the workforce by 800 to 2,400.

Germany — Bayer's overall sales in Russia totaled €726 million in 2012, with HealthCare accounting for 67%. In the first half of 2013, revenues rose 12.5%.

All subgroups are expected to see "significant" sales growth in Russian sales over the next decade, Dekkers said, adding that the €2 billion threshold could be exceeded in 2022. This would place the country among its top ten markets. Collaborations and partnerships play a major role in Bayer's continuing development, the CEO said.

Bayer HealthCare, currently Russia's fourth largest health care company, is projected to increase its sales in this market by some 14% annually to around €910 million in 2017, thanks mainly to new product launches. The subgroup has entered a strategic partnership with local drug manufacturer Medsintez to jointly manufacture and commercialize diagnostic imaging products as well as pharmaceuticals,

Bayer Material Science (BMS), which accounted for 20% of group sales in Russia in 2012, is expected to increase revenue by 9% to €230 million by 2017. The subgroup is already experiencing strong growth in demand from the construction, automotive, E&E and furniture sectors, where Dekkers said it has "substantial market shares." Currently, per capita consumption of plastics materials in central Europe and the CIS countries is four times lower than in western Europe," Dekkers said.

The CEO also sees "major development potential" for Bayer CropScience in Russia. In 2012, the subgroup had sales of €93 million, 13% of the Bayer total. Revenue is forecast to climb by 8% to €150 million by 2017. Spending for crop protection across the country is currently €10 per hectare, compared with €150 in Germany and €165 in France.

"With Russia having four times as much agricultural land as France and six times as much as Germany, we can easily imagine that with a slightly more intensive approach, Russian agriculture could increase its total production significantly," Dekkers remarked. Bayer plans to launch 23 new crop protection products in the country "in the coming years." (dw) ■

Setting New Directions

C3X Survey 2013 Identifies Game Changers that Enable Companies to Outperform Peers in a Volatile Market

Lacking Impulse – In recent years, chemical players have managed their businesses with little clear direction in the light of continuing volatile markets. They aimed to address the key strategic tasks by aligning strategies, increasing portfolio effectiveness or improving their operational fitness. Recently, the market has been lacking significant new impulses — some players have observed unexpected decreases in earnings, while others have benefited from more or less lateral development in their specific segments.

Dr. Tobias Lewe
partner in the Chemicals and Oil Practice, A.T. Kearney

Robert Renard
senior consultant in the Chemicals and Oil Practice, A.T. Kearney

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The seventh edition of the Chemical Customer Connectivity Index (C3X), a top management panel survey conducted by A.T. Kearney, CHEManager Europe and the Institute of Business Administration at the Department of Chemistry and Pharmacy of Westfälische Wilhelms University Münster, Germany zoomed into top management views on these developments to determine the strategies to be followed to achieve excellence in chemicals. Still, there is no silver bullet for future success, but the survey has identified a number of game changers that enable companies to outperform peers in a volatile market — provided they are addressed appropriately.

Sustaining Profitability

Over the past 12 months, chemical manufacturers continued on their growth path: 60% of all C3X panel participants experienced revenue growth of up to 10%. This growth was mainly achieved by passing on raw material cost increases. However, one in four manufacturers — a comparably larger share than 12 months ago — saw their revenues decline. Expectations going forward are brighter: In contrast to second quarter backdrops for some market players who were exposed to building blocks such as butadiene, the majority of panel participants expect their business to grow and to compensate the impact of raw material costs.

This is in line with recent economic outlooks published by the OECD or the World Bank for North America, China and selected European economies.

The majority of survey participants from the chemical industry — three out of four — envision growth of up to 10%, with the remainder even more positive, expecting 10% and more. Customers generally support this positive outlook, however, there is a relevant 20% of the panel who expect a decline.

Easing of Raw Material Prices

Raw material availability and prices have flattened out since our last survey, with the relative importance attributed by panel members to the availability of supplies and alternative raw materials declining. For example, the price of U.S. crude oil is projected by the World Bank to be flat to slightly declining and prices for gas-based derivatives have eased in the light of shale gas development.

Dr. Tobias Lewe, Partner in the Chemicals and Oil Practice at A.T. Kearney explained: "Manufacturers find themselves in a situation where market liquidity for most basic molecules has increased. This means the need to secure strategic raw materials has moved towards a need to be supplied with cost competitive materials, including in most strategic categories."

Going forward, excellence in supply management remains a major differentiator and is expected to become even more integrated along the supply chain. This is being addressed by chemical manufacturers with a growing focus on the supplier (to realize common value improvements) as well as on the customer interface (e.g. collaborative innovation).

Reassessing the Value of Innovation

Before the credit crunch and economic crisis of 2008/09, most manufacturers saw the need for continued innovation aligned with mid- to long-term developments. Even during the crisis, manufacturers stated that they wanted to continue investment in innovation. Since then, manufacturers have continued to focus innovation efforts on new product features (80%) and further strive to be perceived as innovation leaders (75%). These have been top priorities among C3X panel participants for the last five years.

On the customer side, a number of aspects have changed with regard to their ranking, but priorities remained unchanged. Customers and manufacturers mutually agree that new applications/product features would appear to be more relevant than innovative business or service models. The share of revenues that panel participants spend on innovation has remained stable over the last five years. Now, our participants tend to be more critical about their innovation spending: The share of customers that spend 2% or less has doubled in size, reaching 40% now.

For decades, the chemical industry has been lacking real game-changing innovations driving additional growth. Maintaining market share and competitive positioning via incremental innovation is crucial.

Robert Renard, senior consultant in the Chemicals and Oil Practice at A.T. Kearney explained: "For some segments the focus has shifted more and more toward engineering and technology investments aimed at further improving asset efficiency and scale."

Supplier and Customer Interface

Participants have confirmed their view that future value generation is expected at the supplier as well as the customer interface: Excelling in pricing (77%), accelerating time-to-profit for innovations (65%) and process excellence (62%) are the main improvement levers. Nearly 90% of customers meet their suppliers regularly — a strong increase. The share of manufacturers that meet their customers' customers remained unchanged at 45%.

"We observed that participants have become more used to driving collaboration in a more professional and targeted way," Lewe said.

Although manufacturers still overestimate the value of generating market intelligence for "internal use," customers benefit from the results of manufacturers' activities that drive collaboration more intensively (from 74 to 84%). Ultimately, customers confirm that this has increased strongly. It is even assumed that this level will be able to be increased further to 95% over the coming five years.

In spite of the commonly agreed importance of collaboration, though, there are still obstacles to its implementation. Participants consider the lack of "right" people and capabilities (48%) and the lack of trust shown to external parties (46%) to be the most important challenges. Furthermore, there is a gap in terms of the importance of offering customized services. Nearly two thirds of manufacturers are working on improving their performance in this respect, while this is actually relevant to only 42% of their customers.

Demystifying Sustainability

Overall, the relevance of sustainability-related aspects has declined, and the latest survey reveals the lowest values we have observed in recent years. Customers and manufacturers alike share this view, except with respect to the importance of waste disposal, which increased among customers. The latter also shows the greatest misperception between manufacturers and customers: 32% of manufacturers, but 50% of customers now regard it as a priority.

A second observation: Environmental sustainability issues, such as waste disposal or reusability, are much more of a concern for customers outside of Europe. Keeping in mind that environmental sustainability has been primarily a European notion, this might indicate that a certain level of satisfaction has been achieved in Europe, at least.

Leveraging Distributors

Managing complexity has been a major focus for many manufacturers for many years. Parallel to that, the role and importance of distributors has increased globally. Panel participants have named distributors and resellers as one if not the most important collaboration partners going forward.

"Distributors are seen as instrumental to enabling one to focus one's own activities on key accounts, markets and regions," Renard said. "They are also being increasingly deployed to realize selected value added in terms of formulation, logistics services, speed to customer, enablement of lean back offices or even by offering complementary products. At the same time, expectations with respect to distributor performance and capabilities have increased."

This emerging trend is actually mutual: While distributors and resellers are repositioning themselves as partners, manufacturers are also increasingly recognizing the movement toward and benefits of engaging with one another on an equal footing. Other highlighted partners include: Chemicals, plastics and rubber (14%), automotive and automotive parts (13%), construction, building and materials (11%) and consumer goods (7%).

Placing the Right Regional Bets for Growth

New energy sources have not yet had any significant impact on companies' investment decisions. Nearly a third of manufacturers and customers stated that these new sources had no impact at all.The impact on the related supply and demand balances was marginal, also. Nearly one in two manufacturers and three quarters of customers experienced no or minimal changes. Participants will continue to focus their near-term investments (over the next three years) on building up manufacturing capacity in China.

For manufacturers, Western Europe (50%) and North America (43%) follow as the next most important regions. Compared to recent panels, North America has seen a significant improvement as a potential location for near-term investments: For example, in the 2011 C3X, only 8% of manufacturers saw North America as a target for investment at all.

Customers, on the other hand, have indicated much stronger investments in India and South America, with 42% and 27%, respectively, naming them as top regions.

Dr. Tobias Lewe, partner in the Chemicals and Oil Practice, A.T. Kearney

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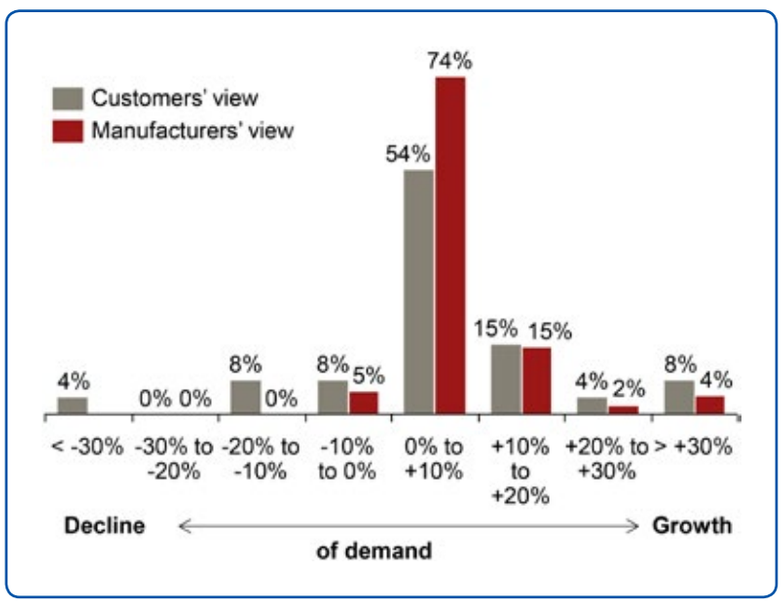

Figure 1: Demand development expectation for the next 12 months

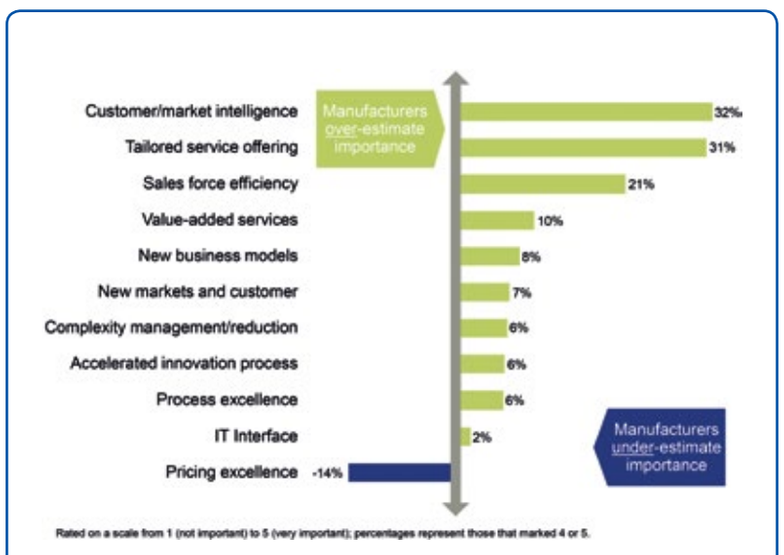

Figure 3: Perceptions about how to improve collaboration

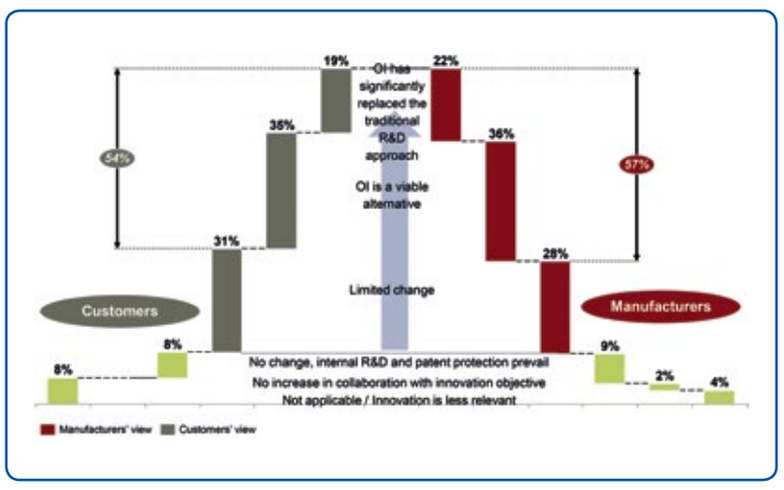

Figure 2: Influence of collaboration on ways to innovate

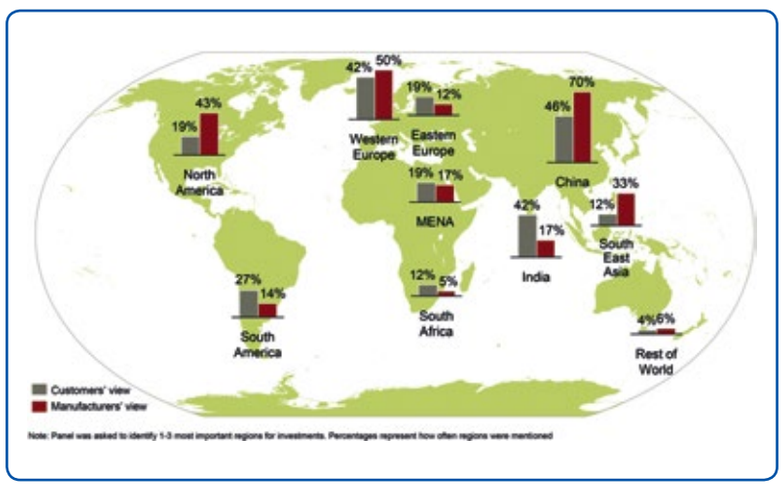

Figure 4: Where investments are going

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About C3X

The objective of C3X is to analyze the chemical industry from the vantage points of chemical companies and their customers. The survey captures the views of senior executives from leading European chemical companies and of decision-makers in customer industries working at the interface to their suppliers. Participants in this seventh C3X survey, which was conducted in June-July 2013, included executives from 10 European countries as well as from the US, India, South Korea and China, representing chemicals firms and client companies — a total of about 150 executives in all. The customer industries cover a variety of different sectors, ranging from the automotive and food industries to the cosmetics sector.

C3X Chemical Customer Connectivity Index

Total to Shutter Carling Cracker and Focus Site on Resins

LOCATIONS Company to Invest €160 Million through 2016

French petrochemicals group Total has announced plans to close its loss-making steam cracker Carling, in northeastern France, in the second half of 2015. Employees of the petrochemicals group were informed at a meeting of the central works council on Sept. 4.

France – Some 210 jobs will be eliminated in a revamp of the site, where €160 million is to be invested up to 2016. However, Total said the downsizing is planned to be achieved through attrition and without layoffs. Of the current 554 jobs, some 344 will be kept and 110 added with new production facilities.

The Carling site will become a platform for hydrocarbon resins produced by subsidiary Cray Valley as well as the company's decision-making and R&D center. A production facility for C4 resins used in additives for touch-screen production, along with high-performance tires and lubricants, is to be part of the planned investment. An adhesives plant will be converted to produce transparent resins.

Carling is also planned to become a polystyrene production center for Total, which claims to supply about a quarter of the European PS market. As part of the investment, the French group will build a new polypropylene compounding unit to cater to the growing trend in automotive light-weighting. Polyethylene production at the site will be upgraded to meet demand for advanced plastics from the medical and cable sectors, Total said, without disclosing capacity plans.

By making Carling the European center for the hydrocarbons resin business and investing in the polymers business there, Total's president for refining and chemicals, Patrick Pouyanné, said, "we are confirming our willingness to maintain sustainable industrial activities in France while investing in promising markets."

The French group said it will uphold its contractual commitments to customers and "will deploy the logistical investments required to ensure the development of ethylene and propylene." In addition to the Carling cracker, the only one of its four that is not back-integrated, Total operates three other crackers in France, at Gonfréville, Feyzin and Lavera.

Management said also that the petrochemicals group is "committed" to supporting partner companies affected by the restructuring process, without giving details. To increase the attractiveness of Carling, Total will offer shared services and encourage outside investment moving into the Lorraine region.

Earlier this year, Total said it would revamp its refinery and petrochemicals operations at Antwerp, Belgium and close a smaller steam cracker and PE plant at the site as part of its forward strategy to concentrate on large integrated platforms. (dw) ■

Saltigo to Relocate Corporate HQ to Leverkusen

LOCATIONS Fine Chemical Company to Move from Langenfeld into Former Lanxess Building

In a reshuffle of corporate functions following the relocation of group headquarters from Leverkusen, Germany, to Cologne, Germany, Lanxess is moving the headquarters of fine chemicals subsidiary Saltigo from Langenfeld, Germany, into its recently vacated Leverkusen premises.

Germany – From the end of January, some 1,100 of the fine chemicals producer's 1,200 worldwide staff will work in Leverkusen, where most of the company's manufacturing facilities are based. Lanxess' Global Procurement & Logistics arm will move into the Saltigo premises at Langenfeld. With these moves, the German group said it is strengthening its most important worldwide location for its agricultural products portolio.

"Saltigo's headquarters needs to offer the best possible conditions to enable the company to continue efficiently steering its growth trajectory," said Lanxess managing board member Werner Breuers, adding that, "we will create these conditions by having the new main administrative center in the immediate vicinity of research and production operations."

Targeted investments at Leverkusen will ensure that Saltigo continues to occupy a leading position in the dynamic custom manufacturing market, said the company's managing director, Wolfgang Schmitz. Some €100 million will be invested in the agricultural intermediates activities at Leverkusen through 2015. About a fifth of this will be spent on additional capacities for solids isolation. (dw) ■

BASF Pushes Harder on Shale Gas Exploitation

ENERGY BASF's Suckale Says High Energy Prices Are Driving Customers out of Germany

BASF is stepping up its pressure on Germany to soften its hesitant stance on shale gas exploitation. In presenting Q2 results in July, CEO Kurt Bock said he hoped the new government elected on Sept. 22 would take a bolder approach.

Germany – In a late August newspaper interview the German chemical giant's managing board member Margaret Suckale said the group has knowledge that due to high energy prices customers are turning their backs on the country and relocating planned investment to Asia or the U.S.

Even if hydraulic fracturing (fracking) is controversial, it at least lowers

Margaret Suckale
member of BASF's board of directors

the energy prices, Suckale said, while noting that gas price in the U.S. are only a quarter of those in Germany.

Potential petrochemical investors in Asia are also looking with envy to the U.S. shale gas boom. At least one has announced plans to withdraw from a mammoth project in Malaysia, saying that naphtha cracking has become comparatively uneconomical. Following conclusion of a feasibility study, Taiwan's Kuokuang Petrochemical Technology Company said it would not build a cracker in Pengerang, Johor province, planned as part of a refinery and downstream complex.

Also because of the perceived new feedstock economics, Malaysian state-owned energy and petrochemicals group Petronas may reconsider parts of its RAPID refinery project at Kohor. Reports say a decision is to be made by March 2014. Earlier this year, BASF stepped back from plans for a 60:40 specialty chemicals joint venture within the Petronas RAPID project, saying the two sides had been unable to agree on terms and conditions. (dw) ■

German Chemical Firms Call for Curbs on EEG

ENERGY Country's Renewable Energy Sources Law Too Costly, Says Industry Association

The committee of small and medium-sized enterprises within the German chemical industry association Verband der chemischen Industrie (VCI) has joined the swelling chorus of voices from business and industry pleading for revision of the country's renewable energy sources law known as EEG.

Germany – Just ahead of national elections scheduled for Sept. 22, the grouping presented in Berlin a memorandum with 200 signatures of chemical SMEs that calls for a stop to the escalating cost of supporting renewable energy at the expense of conventional sources.

The EEG has turned out to be a "dangerous cost avalanche" threatening not only energy-intensive small businesses but consumers as well, said the VCI committee's chairman, Reinhold von Eben-Worlée. Unless the next government turns the rudder around and ends its financial support for new renewable energy plants, the transition away from nuclear power and toward sun- and wind energy will fail, he asserted.

The continuous rise in the cost of the levy used to finance the energy turnaround devours resources that chemicals producers need to finance innovation and capital investment, Eben-Worlée added. The entrepreneurs also have appealed to the future German government not to abolish the hardship clause awarding price relief for energy-intensive manufacturing companies. (dw) ■

Styrolution CEO Triggers Speculation Over BASF Exit

PORTFOLIO BASF Denies Plans to Change JV Shareholder Structure with Ineos

BASF and Ineos are seeking to quell speculation over impending ownership changes at their 50:50 styrenic polymers joint venture Styrolution, an asset merger dating from late 2011.

Germany – German and international news media have quoted Styrolution CEO Roberto Gualdoni as telling briefing in Frankfurt that BASF is definitely planning an exit. However, the Ludwigshafen chemical giant told other publications that are also no plans for changes in the shareholder structure at present, and Ineos said there is "no urgency."

Roberto Gualdoni
CEO, Styrolution

Roberto Gualdoni explained to journalists that Ineos has a call option to acquire the BASF stake from February 2014 and BASF a put option to sell its share to Ineos after October 2014. Other possible scenarios could be an initial public option or a sale of the business to a third party.

The move by the two industry giants to combine their styrenics activities two years ago was widely seen as a first step toward consolidation of an oversupplied market. Before entering the jv with Ineos, BASF had unsuccessfully tried to sell its business. The combined portfolio styrene monomer (SM), polystyrene (PS), acrylonitrile butadiene styrene (ABS), styrene-butadiene block copolymers (SBC) and other styrene-based copolymers.

In Frankfurt, the Styrolution CEO said the company is on track to realize cost savings of around €200 million as a result of the asset merger. (dw) ■

France Seeks Reclassification of BPA under REACH

LEGISLATION Stricter Standards for Chemical Planned

France is seeking to amend the harmonized classification and labeling (CLH) of bisphenol A (BPA) under REACH to reflect its own planned stricter standards for the controversial chemical used to produce polycarbonates and epoxy resins.

France – In a request filed with the REACH administrative body, European Chemicals Agency (ECHA), the French agency for food, environmental and occupational health and safety, ANSES, said the classification should be revised on the basis of recent studies, including one of its own dating from 2011.

The French proposal applies only to reproductive toxicity, which means the possible adverse effects of

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the chemical on sexual function and fertility. It would move the substance from reproductive toxicity category 2 (suspected of damaging fertility) to category 1B (may damage fertility).

ECHA's 45-day public consultation on amending the classification and labelling of BPA ends October 11, after which the agency's Risk Assessment Committee will prepare a scientific opinion, taking account of comments received. A decision could be expected within 18 months.

France's own legislation banning on BPA in all food contact packaging from 2015, already approved in differing versions by both houses of parliament is still in limbo, pending completion of a report on the health and environmental hazards of endocrine disruptors due next year. (dw) ■

Doing Business the Indian Way

Multinationals Must Adapt to Local Practices to Succeed

The Next Level – Over the past 20 years, multinational companies have made considerable inroads into the Indian market, but many have failed to realize their potential. For multinationals, the key to reaching the next level will be learning to do business the Indian way, rather than simply imposing global business models and practices on the local market.

To realize India's potential, multinationals must show a strong and visible commitment to the country, empower their local operations, and invest in local talent. It's essential that multinationals raise their game in India: The country's economy is expected to grow by upward of 6% annually in the next few years, among the highest rates of any big emerging economy. In several product and market categories, India could account for more than 20% of global revenue growth in the next decade. In other words, the future of many multinationals depends on their ability to succeed in India.

Empowering The Indian Organization

Many multinationals in India are stuck in a profitability trap characterized by a lack of commitment to build country-specific operations and management systems. When expatriate company heads are brought in, their efforts often fall victim to short rotation cycles that inhibit the execution of long-term strategy. One important differentiator is the ability to demonstrate a commitment to India through the economy's inevitable cycles and volatility. Policy makers and local entrepreneurs have long memories, and "state visits" by global CEOs and chairmen are not sufficient if a company doesn't follow through on its commitments.

Empowering local management is also critical for attracting and retaining talented staff. Many multinationals are moving toward the creation of a strong Indian business unit and, in the process, moving away from functions or global products as the primary axis of governance. These companies are investing in top talent: The head of the Indian unit is experienced and knowledgeable about the market and has a direct line of communication with the global company's CEO. This direct connection to global management — combined with the ability to make decisions on capital spending, products, and pricing — holds a local leader more accountable and facilitates the sharper development and execution of strategy.

Local empowerment should extend beyond the country head to lower levels of management, which can help drive innovation and entrepreneurialism on the ground and decrease times to market for new products. But structure is not enough. Multinationals need the right people — especially in middle management, a group critical to the successful execution of a growth strategy. Given the vast array of opportunities available in India and its relative shortage of management talent, multinationals have had to revise their models significantly. With the continuing professionalization of Indian companies, the country's stronger managers have less incentive to work for a branch of the multinationals, which must look beyond short-term tactical measures to attract high-quality people.

Innovating For India

Multinationals are learning that many different Indias exist within the subcontinent. The big differences — the haves and have-nots, languages, literacy, and geography (including the urban–rural divide) — make it difficult for a global brand to satisfy all of the country's consumers. Multinationals also face the challenge of low-cost local competitors.

This aspect of competition in India means that innovation is occurring not only through localized products and services but also in business models and processes. To strike a balance between global brands and local positioning, multinationals can introduce sub-brands or models with features suited to Indian needs. They could also work with local suppliers to reduce costs, which would allow them to offer cheaper prices to the end consumer. Although many of these ideas are not new, multinationals have been slow to implement them in India. The key is that customization has to be a game-changing strategy rather than an incremental one: multinationals must aim to cut costs by 60-80%, with just a 30% reduction in features.

Choosing the Right Entry Strategy

One of the first and most important issues for a multinational considering doing business in India is ownership structure. Multinationals that enter the country on a stand-alone basis generally fare better than those that use Indian partners to create joint ventures. Most global companies that opted for them have exited the Indian market, while some have purchased the stakes of their partners or established majority shareholdings.Multinationals that choose joint ventures as their entry vehicle into India think that a local partner can better navigate the market's complexities and manage regulatory issues. There is some truth to that idea, but in practice, joint ventures often tend to emphasize short-term performance over long-term goals, long-term commitment, and an alignment between the interests of the global and local partner. Without management control and a clear path to ownership, global companies may have no alternative but to exit the market. Joint ventures can be beneficial in some cases, but they are not essential if a multinational regards India as a priority market and regulations allow the company to have majority or complete. When joint ventures are necessary, multinationals should ensure that they have real management control and a clear path to ownership should that become necessary.

Strategic Partnerships

Partnerships with Indian companies need not be limited to joint ventures — multinationals should also consider strategic alliances with local players. For example, a global pharmaceutical company established itself as a stand-alone entity but developed strategic alliances with a local manufacturer in licensing and supplies for the generic and off-patent segments. These agreements helped the multinational to enter India's fast-growing market for low-cost, easily accessible branded generics and off-patent medicines.

Winning in India requires an intense and concerted effort. The multinationals need top leaders willing to make a commitment to the Indian operation and to localize and empower it. They must adapt to the Indian consumer's demand for innovative, low-cost delivery systems and high value for money products, as well as identify and implement an appropriate ownership model. Finally, senior executives of these companies should not neglect the management of local stakeholders, such as regulators and activists. The best efforts to localize an Indian business model will come to naught if these influential groups are overlooked.

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Changing Strategies

India Responds to Pharma Market Dynamics

New Focus – The importance of Indian companies in the global pharmaceutical supply chain is well known and well documented. Large quantities of base chemicals, intermediates, active pharmaceutical ingredients and finished formulations travel from India to all parts of the world. However, the increasing competition from China and the increased costs to participate in the U.S. market are changing the strategies of Indian companies.

U.S. Market Presence

Some of the first U.S. Drug Master Files (DMFs) from Indian companies were submitted in the late 1970s and early 80s. Since then, Indian companies have become some of the major API suppliers to the U.S. drug industry. By the end of 2012, Indian companies held approximately 40% of active type II U.S. DMFs submitted over the past 10 years (fig. 1). Although filing a DMF doesn't necessarily mean a company is supplying API to the U.S., it is a good indication of intent and interest in supplying to the U.S.. The recently enacted Generic Drug User Fee Act (GDUFA) legislation adds a $20,000-$30,000 fee the first time the DMF is referenced in an Abbreviated New Drug Application (ANDA), and is likely to affect the number of DMFs filed in the coming years from India and around the world.

In addition to manufacturing API, many Indian companies supply finished dosages to the U.S. market. There is an almost exponential increase in the number of ANDA approvals by Indian companies over the past 10 years. The number of ANDA holders from India has similarly increased dramatically (fig. 2). In addition to the one-time DMF fee, there is also a $50,000-$60,000 filing fee for an ANDA. GDUFA requires that manufacturers must also pay annual facility fees for each site producing API and finished dosages for the U.S. market. The combination of these fees will significantly influence how companies choose what products to develop and bring to the U.S. market.

Evolving Markets

Along with GDUFA fees, the increasing manufacturing costs, salaries, and environmental requirements in India are adding to the pressure on Indian companies. As a result, a growing number of Indian companies are purchasing active ingredients from China for their own market. The amount of India's pharmaceutical market supplied by Chinese API has increased significantly over time, as seen in figure 3. The list of active ingredients with the most Indian import registrations held by Chinese companies highlights the type of products in which China has overtaken India in manufacturing. This includes antibiotics, such as erythromycin, doxycycline and cephalosporins, as well as commodity products such as acetaminophen.

Many active ingredients made in China are increasing in price due to the rising costs of energy and new GMP regulations in China, thus escalating expenditure for many companies around the world. These increased costs of Chinese materials will, in turn, decrease the margins for many Indian companies and their customers. Indian companies are also challenged by excess API manufacturing capacity in India as the number of innovative large volume products going off-patent has declined in the past few years. In order to become more self sufficient and compete with China on the global market, some Indian players have called upon government incentives to boost local API manufacturing. However, it is likely that many Indian companies will continue to rely on China for APIs and advanced intermediates.

Future Prospects

In response to the growing competition in the global marketplace and the increasing costs to supply into the U.S. market, many Indian companies are investing in novel technologies. Indian companies are building more advanced facilities that can manufacture highly potent active ingredients, as well as complex delivery systems. In addition to making inward investments into specialized manufacturing, many companies are also partnering with others that have niche capabilities. Some examples include Sun's acquisition of dermatology company Dusa, as well as the joint venture between Omnichem and Granules for high potency products.

Over the next few years we expect India's reliance on China to continue, and rising costs in China will lead to a concurrent rise in costs in India. It is likely India will face increased competition for low-priced API from China on global market. Continued pricing pressures will impact many companies sourcing decisions, and Indian companies will likely increase their presence in the western markets despite the increased costs.

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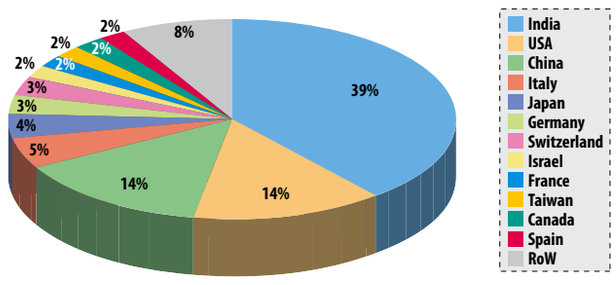
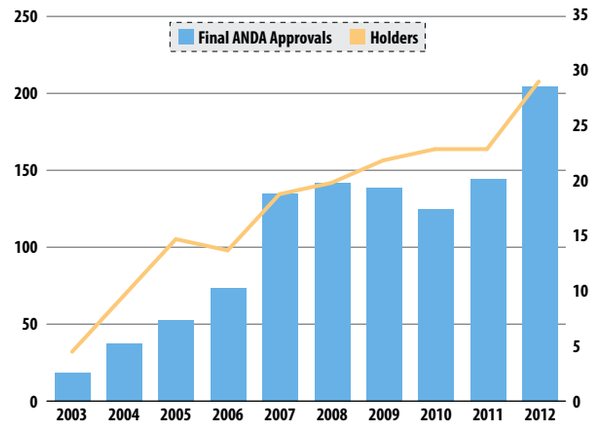
US Type II Active DMFs by Country of Holder Fig. 1
(2003–2012)



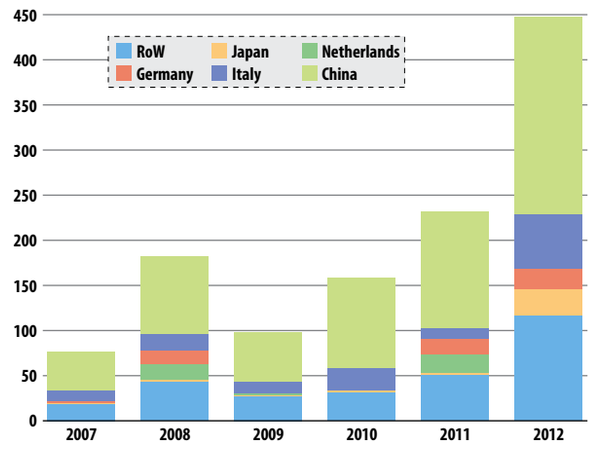
Source: Thomson Reuters Newport Premium © CHEManager Europe

ANDAs Held by Indian Companies Fig. 2



Source: Thomson Reuters Newport Premium © CHEManager Europe

Indian Import Registrations Fig. 3



Source: Thomson Reuters Newport © CHEManager Europe

Dow Confirms U.S. Sites for New Shale Gas-fed Plants Dow Chemical has confirmed the locations for its planned new shale gas-fed polymer plants on the U.S. Gulf Coast, announced in March of this year and expected to be in full operation by 2017. The U.S. group said the new facilities expected to cost around $ 1 billion — along with other "high-return investments" in the region — have potential to deliver EBITDA of as much as $2.5 billion. Capacity numbers have not been disclosed.

Freeport, Texas, is the site selected for expansion of Dow's Affinity-brand high melt index polymers, used to strengthen the bonding properties of hot-melt packaging adhesives, as well as its Elite polymers for medical and packaging applications. Both plants will use the group's proprietary Insite catalyst technology.

Plaquemine, Louisiana, is the location chosen for the planned expansion of the metallocene-based Nordel-brand EPDM rubber facility, along with a new plant for high-performance LDPE food packaging grades such as the Agility brand.

The U.S. group's plans for capitalizing on the shale gas boom also include a 1.5 million t/y ethylene facility due to start up at Freeport in 2017 and a 750,000 t/y propane dehydrogenation plant expected to go on stream in 2015. (dw)

Solvay-Sadara JV to Build Hydrogen Peroxide Plant in Saudi Arabia Belgium's Solvay and Saudi Arabia's Sadara Chemical Company have established a joint venture to produce hydrogen peroxide in Saudi Arabia. A new 300,000 t/y facility planned to start up in 2015 at the Jubail Industrial City complex of the Saudi company — a joint venture of Dow Chemical and the Saudia Arabian Oil Company — will be the first of its kind in the desert kingdom and at the same time, Solvay said, will strengthen its leadership in the country.

The plant will provide a key raw material for Sadara's on-site HP-to-propylene oxide (HPPO) manufacturing plant and feed production of propylene oxide (PO) derivative units that produce polyols and propylene glycol and support the company's downstream polyurethanes customers.

This will be the Belgian chemical producer's third major collaboration on mega plants for the hydrogen peroxide. Solvay operates a 230,000 t/y plant at Antwerp in a three-way partnership with Dow Chemical and BASF, as well as a 330,000 t/y plant with Dow at Map Ta Phut, Thailand.

"Solvay's high-yield HP technology enables such unique, large scale plants to benefit from advantages in both specific investment and production costs," said Pascal Juery, president of the Essential Chemicals business unit. (dw)

PKN Orlen to Expand Phenol Output to 200,000 t after 2017 Poland's PKN Orlen, which claims to be the largest oil and petrochemicals producer in the former East Bloc, has announced plans to widen its production capacity for phenol and acetone.

The company said output of phenol — an important starting material for a variety of chemical processes, in particular for producing the polyamide precursor caprolactam — will be lifted from currently about 50,000 t/y to 200,000 t/y, with the first expansion stage due to be completed in 2017. Production of acetone will be increased to more than 100,000 t/y from about 50,000 t/y. At present, around 70% of Polish demand for phenol is met by imports — mostly from Germany, Belgium and Finland, and PKN said it wants to increase its share of the market against international competition.

Altogether, the petrochemicals giant intends to spend 2.7 billion zloty (some €638 million) on a comprehensive development plan to upgrade its production technology, with an eye to saving energy and feedstock input. Up to Aug. 23, it surveyed capabilities of Polish and international contractors to design and build new facilities and will invite tenders through its Connect online procurement platform. (dw)

Evonik 'Significantly' Expanding Oil Additives in Singapore German specialty chemicals producer Evonik said it will "significantly" expand its oil additives production at Jurong Island in Singapore by 2015 through production improvements and debottlenecking. All the measures combined will nearly double output of the site.

Evonik said it is reacting to above-average growth in the oil additives market resulting from expanding mobility and increasing demand in Asia for high-performance lubricants with higher additive content. When work is completed, the Singapore plant will be the largest of the company's six production facilities for the products.

The additives sold under the Viscoplex brand name are designed to improve productivity and fuel efficiency. Evonik said its decision to locate the new capacity in Singapore reflected excellent supply chain logistics, existing infrastructure, strong IP protection and a skilled workforce, along with support from the Singapore Economic Development Board (EDB). The board provides numerous incentives for international companies investing at Jurong Island. (dw)

BASF Expanding Waterborne Automotive Coatings in Brazil BASF will spend €2.5 million to expand capacity for waterborne automotive coatings at its Demarchi coatings site in Brazil's Sao Paulo state by 2014. The upgrade, which the German group said is in response to customer demand, will encompass both waterborne primer and basecoats.

Antonio Carlos Lacerda, senior vice president of the Functional Solutions segment and Infrastructure for BASF South America, said demand is being driven by new automotive production facilities in Brazil as well as by the trend to replace solvent-borne technology with waterborne processes.

BASF, which helped pioneer waterborne coatings development in the early 1990s, said its technology is eco-efficient because water replaces most of the organic solvent, thus reducing emissions of volatile organic compounds (VOC). It also is claimed to reduce energy consumption and CO_2 emissions by up to 20%. (dw)

An Evolving Role

To Stay Competitive, Chemical Distributors Must Customize Services

Great Expectations – Long gone are the days where the standard chemical distributor's job was to take products from one place to the next. In the modern supply chain, distributors are expected to act as service providers for their customers, offering skills and add-ons that go far beyond logistics. Neville Prior, CEO of Cornelius Group and freshly appointed vice president of the European Association of Chemical Distributors (Fecc) said that manufacturers will continue to expect more and more efficiencies from their relationships with distributors. Brandi Schuster spoke with him about what this means for the industry, especially for the smaller players.


Neville Prior, CEO, Cornelius Group

CHEManager Europe: What is the chemical distributor's role in the modern supply chain?

N. Prior: The chemical industry is global, complex and quite fragmented. A plethora of products are used across a wide variety of end uses, from petrochemicals through plastics, food and personal care, just to name a few. The customer base is hugely variable and demanding, and alongside challenges of logistics, marketing and sales as well as variable delivery size, chemical manufacturers face great complexity in bringing their products to the end-users.

How has that role evolved?

N. Prior: The role of the distributor is not what it was just a few decades ago. Distributors are no longer treated as "just another customer" by manufacturers, but are increasingly recognized as key partners. This has meant that distributors have had to improve their capabilities from a mere sales role to include added-value activity. This could include a number of capabilities such as warehousing and storage; customized logistics solutions based on the product and its end market; user-friendly repackaging; tech and lab support facilities; integrated IT solutions; and marketing savvy. The list goes on and on.

What service add-ons have become standard?

N. Prior: In a world where manufacturers look to focus on what they do best — innovate and manufacture — distributors find there services increasingly in demand. Our role obviously depends on a number of factors, but it is primarily driven by the capability of the manufacturer as well as the demands of both the end-user and geographical markets.

A large, integrated manufacturer will be able to adequately handle their large customers in many cases, while smaller players will look to distributors to handle the entire market. Markets such as commodity chemicals may simply need a good logistic solution, whereas the personal care industry needs far more. Emerging markets are likely to offer a complex network of fragmented customers, while mature markets are likely to see a consolidation of the customer base. Each offers its own challenges and its own solutions.

M&A activity within the sector was buzzing a few years ago but slowed in 2012. Has the predicted upswing for 2013 become a reality?

N. Prior: In my opinion, there has not been a significant upswing in M&A activity, which is not to say that M&A activity does not exist. I believe this is not so much due to economic reasons, although uncertainty must play its role. Rather, I believe that it is a lack of suitable targets. In the mature markets of North America and Europe, smaller companies with niche expertise are being acquired, rather that the headline making marge deals. In emerging markets, acquisition is more about gaining extended geographic coverage. As the larger players gain good coverage in those emerging markets, the rationale will switch across to that seen in mature markets.

How can smaller distributors compete with the large multinationals?

N. Prior: The large multinationals have a global market share of less than 20%, which leaves a large chunk of the market for others. With a global growth rate for the industry nearing 10%, there are many opportunities. However, many of the big producers are not looking to distributors on a single-country basis, but on a regional or even global basis.

It is certain that the smaller distributors will find it difficult to compete at that level. The smaller distributors will need to consider their strategies very carefully, and many will aim to fill a niche in which they have specialized knowledge or skills. Those with the capability will need to consider regional expansion, either through acquisition, partnerships or starting new businesses in new countries. The smaller distributors will have to ensure that they are offering tailored solutions that customers and manufacturers value.

What is the outlook for small European based distributors?

N. Prior: There are a number of schools of thought concerning the outlook for smaller distributors. Those distributors that offer something special will always have their place, as long as they can be seen as different. The opportunity for distributors in Europe will continue to expand as manufacturers outsource more, but it will be increasingly more difficult for smaller players to appeal to those manufacturers.

I can see a number of distributors looking towards manufacturers in emerging markets for their source of products, and this is a viable strategy. They will however need to ensure legislative and quality compliance, as well as building relationships and understanding the different business cultures that are in place. This will take time and money but will offer a sustainable business for those who do it properly. Smaller companies may look to create partnerships with other similar businesses across the region to increase their coverage and purchasing opportunity, and there are several examples of this already occurring.

However, for those companies, it would be a mistake to try to compete globally with multinationals that already have extensive systems and networks in place. There is a place in the market for good, small companies, so find your niche!

What will the sector look like in 10 years?

N. Prior: It is my belief that the sector will continue to expand through to 2023, as manufacturers continue to concentrate on innovation, manufacturing efficiency and servicing key global accounts. Smaller customers and even regions will continue to be outsourced through distributors. However, manufacturers will look more and more to gain efficiencies from these relationships. Distributors will be looking to enhance their services, and I am sure we will see more distributors creating centers of technical excellence to support their customers.

Distributors will stock a wider range of products, allowing manufacturers to optimize their inventory holdings, and there will be a growing move to vendor managed inventory. There will also be more activity in the mixing/blending/formulating sector, reducing complexity for manufacturers, and adding value to partially commoditized products. These services will go hand-in-hand with filling/packaging/labeling capabilities and coping with local legislation.

Will there be further consolidation?

N. Prior: Consolidation will continue, but I would see the emphasis on that being in the emerging economies, where there is much more of a fragmented market, faster growth rates in chemical consumption, and a greater need for supra regional and global players to be present. Mature markets such as Europe may see some consolidation, particularly between small and medium size players, as they strive to cover markets across national boundaries. There will certainly be casualties along the way, particularly amongst those distributors who have no differentiated offer and are financially less able to cope with the rafts of legislation and increased demand from customers and manufacturers for more than "just" a sales force.

You were just elected vice president of the Fecc. How closely does the European Association of Chemical Distributors work with other national associations?

N. Prior: Fecc aims to be the voice of our industry in Europe and as such represents a broad spectrum of that industry. Fecc has direct company members as well as national association members and enjoys an excellent relationship with both. Technical committees as well as the board are supported by both types of members alike, and Fecc recognizes that it must work closely with its national association members on matters of importance in Europe. To this end there is excellent mutual cooperation. However, we live in a global society, and work increasingly in a global business, and Fecc cannot limit its horizons to just Europe. It has a strong presence in ICCTA (International Council of Chemical Trade Associations), where there is the aim to progress the take up of Responsible Care on a global basis. To this end Fecc works alongside non-European associations such as those in North America and China.

If you could fulfill just one goal as VP of the Fecc, what would it be?

N. Prior: We all want to live on a sustainable planet, in a safe and secure environment, and of course we fully understand the requirement for legislation. If I could fulfill a single goal, then it would be to ensure that legislation going forward in Europe ensures that sustainability is maintained, but also that our industry can continue to grow and thrive. Without the chemical industry and distributors, then innovation will be stifled, manufacturing become less efficient, and our standards of living will fall. So my dream is to help to create a European market, where the environment and its citizens are protected, yet we can create fantastic and innovative products that feed into the economy and help towards sustainability on economic grounds also.

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The Miracle of Shale Gas

Changing the Global Petrochemical Landscape

Vir Lakshman, head of chemicals and pharmaceuticals, Germany, KPMG

Paul Harnick, global COO, chemicals and performance technologies, KPMG

Cheap, Clean And Controversial – Shale gas has the potential to turn the world's energy industry on its head. It's abundant. It's cheap. It burns cleaner than other fossil fuels. And it's being found almost everywhere. But for shale gas to become a game-changer, the industry has to surmount tremendous organizational, reputational and regulatory hurdles.

Clean-Burning Benefits

Once captured and processed, natural gas is one of the cleanest burning and lowest carbon content fossil fuels. For companies subject to greenhouse-gas emission-reduction targets, natural gas usage may offer more "tick-the-box" benefits than traditional fossil fuel sources. At the consumer level, regions that rely on oil-based heating, such as parts of the U.S., could bring their emissions down by encouraging homeowners to convert to natural gas heating. Additional incentives could be granted to promote the development and sale of vehicles powered by natural gas.

Pushing Prices Down

The discovery of abundant reserves of shale gas in the U.S. has driven down the natural gas price and has created a massive competitive advantage for U.S. companies. Generally a ratio of 6-1 between crude oil and gas prices is enough to make the U.S. chemical environment favorable. At today's prices, the disparity is more like 9-1, creating lasting advantages for U.S. producers. Cheap shale gas is also providing a boost to the wider U.S. manufacturing base — providing competitively priced energy such that "made in America" is becoming a cost competitive option again, leading some multinationals to rebase their production in the U.S.

Continued discoveries in unconventional oil reserves, coupled with growing production, efficiency improvements and a relatively slow recovery in North American demand, have all contributed to depressed gas prices.

This has led to a significant decline in dry gas shale development over the past 18 months. After growing from around 750 billion m^3 in 2005 to more than 7,845 billon m^3 in 2011, U.S. natural gas production is forecasted to remain effectively flat until 2015, according to the U.S. Energy Information Administration's Annual Energy Outlook.

Maximizing Shale's Potential

Certain regions of the U.S. lack pipelines, terminals and storage to hold and transport shale gas and oil to the customer base. In order to fully exploit the potential of shale gas, it is estimated that, between 2011 and 2035, the sector needs $2 trillion in upstream investments for wet gas production and $1.7 trillion for dry gas. An additional $205 billion capital spending would be required for gas infrastructure development, according to a report from private equity firm KKR & Co., with mainline gas transmission expanded by about 35,600 miles and an additional 589 billion ft^3 of working gas storage. Although the required infrastructure will take decades to build, and gas prices may not recover for several years, there is no questioning shale's overall potential. In 2007, shale accounted for less than one-tenth of total gas production; by 2035, the U.S. Energy Information Administration forecasts it to reach half of total gas production.

Regulatory Debate On Fracking

The chemicals in the fracking process may contaminate local drinking water or the environment, which has led to a regulatory debate about shale gas. Despite its cost benefits, it must be noted that shale gas extraction remains a contentious and divisive issue for many politicians, communities and even the chemical industry. Nearly a dozen major energy companies, including Chevron and Shell, recently released a set of shared standards for fracking in the Appalachian region. While the regulatory debate about shale gas is still ongoing, the commercialization of shale gas has already heralded in a new era of growth and prosperity for the U.S. oil and gas industries.

Advantage: United States

Recent announcements from Dow, Shell, Sasol, Chevron Phillips and others suggest that we will likely see more than 10 million tons of new ethylene capacity come in stream by 2017. Investments in the extraction coupled with the sheer abundance of proven shale reserves (200 years based on current U.S. demand outlook) have made the U.S. industry the second most feedstock-advantaged region after the Middle East. As Middle East countries, however, continue to use more gas for domestic energy and fuel for water desalination plants, gas allocation to the petrochemical industry has become extremely limited, such that the U.S. is expected to become the most advantaged location for petrochemical production worldwide.

Until the development of European and Asian shale, which is not likely before 2017, the U.S. will continue to enjoy this competitive advantage. However, the U.S. market remains a mature economy, which will not be able to absorb all the planned chemical capacity. Therefore significant investment in supply chains is required along with a focus in establishing a broader growth market presence.

Three Potential Scenarios

As these dynamics play out over the next few years, the shale phenomenon is likely to fundamentally alter the established pattern of global petrochemical trade flows. We see three potential scenarios, which are not necessarily mutually exclusive. The first is the potential for a return to boom and bust cyclicality in the U.S. — the U.S. commodity chemical industry is currently well rationalized — perhaps for the first time ever — with much of the historic cyclicality removed and commodity chemical businesses enjoying stable long-term returns. If U.S. chemical companies are unwilling or unable to develop customers for their products outside of the U.S., we are likely to see the return of cyclicality, resulting in large margin swings through the cycle, the closure of old plants at the bottom of the cycle and all the other ills historically attributed to the commodity industry in the U.S.

The second scenario is price and margin erosion in Asia. The Asian market is currently predominantly served by local product supplemented by vast imports from the Middle East. We are already seeing a shortage of ethane feedstock for the chemical industry in the Middle East, with new and forthcoming expansions increasingly relying on more expensive naphtha-based feeds. The U.S. market is mature and may not be able to absorb all of the planned capacity. As U.S. product starts to flow to Asian markets, we may see increased price competition — which may become increasingly fierce if some of the implications above have already started to affect the U.S. market — making producers increasingly desperate to sell their product whatever the cost.

The third potential scenario spells trouble for the petrochemical industry in Europe. Large parts of the European commodity chemical industry are characterized by overcapacity and older, less efficient plants. If U.S. producers export directly to Europe, or if Middle Eastern producers respond to increased competition in Asia by switching their export focus to Europe, many European commodity chemical producers will find themselves at a severe cost disadvantage, making it difficult for them to compete. That is not to say the European chemical industry is doomed, as many have predicted. Rather, we are likely to see a continued squeeze on the commodity end of the sector with companies focusing on high-value specialty chemical areas, where European companies continue to have an advantage on many of their overseas competitors based on long-established technology and know-how.

U.S. Prevails For Now

While many other areas of the world have huge potential shale gas resources (fig. 1), there are many challenges associated with bringing production to a commercial scale. If we focus on some of the world's key chemical markets, China has recoverable reserves of 1,275 trillion ft3 but lacks the horizontal drilling technology required for extraction — not to mention the thousands of miles of pipeline that would be required to get the gas to the chemical producing regions on the east coast. Likewise, Germany and Poland lack the pipeline infrastructure to move gas from the shale basins. Environmental issues abound, not least in France where the government has banned fracking. Even in the UK, where test drilling has started with government support and where an established gas pipeline is in place, we are unlikely to see commercially significant quantities of shale gas this side of 2020. Finally, in Europe as a whole, even if the pace of shale gas extraction accelerated, only four of 45 steam crackers on the continent are capable of consuming gas feedstock in significant quantities. As such, the U.S. chemical industry is likely to retain its feedstock advantage for considerable time to come.

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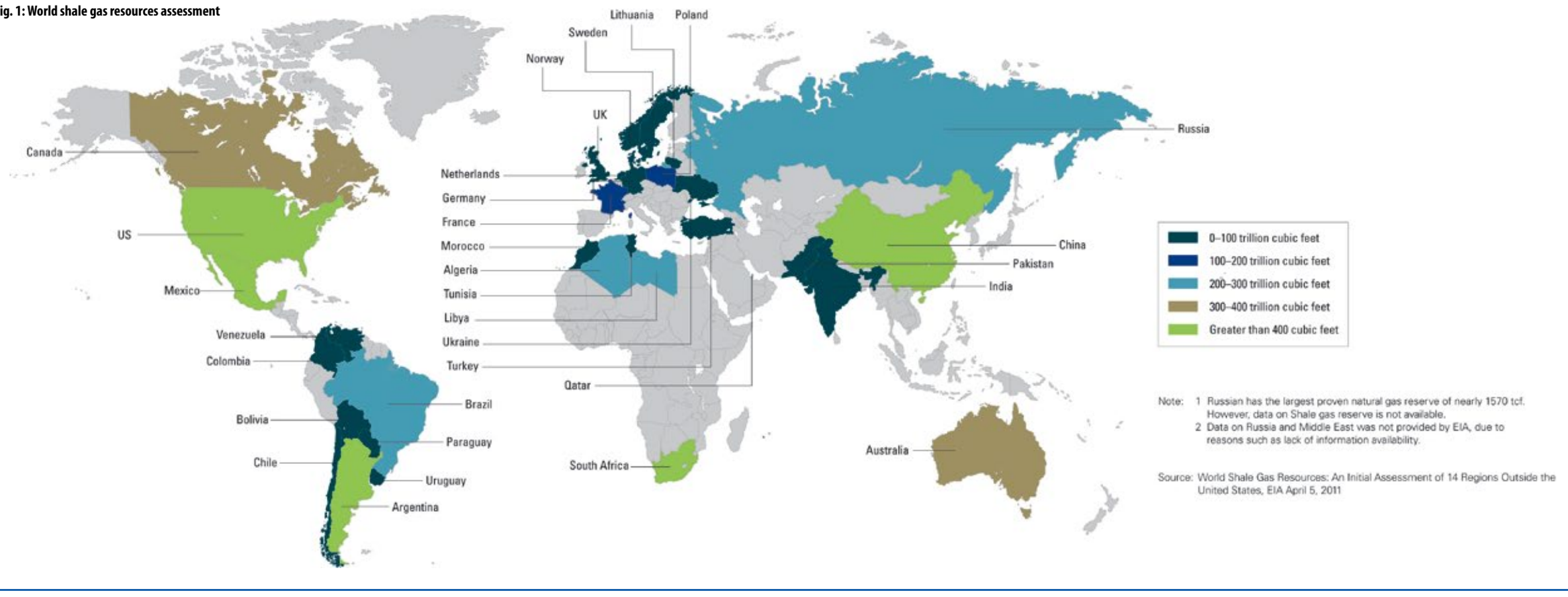
Fig. 1: World shale gas resources assessment



Laying Tracks for Shale Gas

Pressing on Policies and Regulations in Europe

Dr. Sven Bugarski
Stratley

Nicolas Maulet
Robert Gordon University

Shale Gas is Rolling in U.S. – Although shale gas extraction has been known and performed to a limited extent for decades in the U.S., exploitation has become competitive only in the past 10 years. The main reasons:

- Substantial advances in drilling and fracking technology
- High global oil and gas prices, as the amount of low-cost oil and gas has decreased drastically, and demand — especially in the emerging markets — has increased steeply
- Political and regulatory support in countries strong in unconventional energy resources in order to strengthen U.S. energy security

Consequently, the U.S. gas price has decoupled from the oil-indexed gas prices and, at $4 per million British thermal units, is well below the prices in Europe ($10/MMBtu) and East Asia ($16/MMBtu). The spread, although forecast to decrease somewhat because of international trade in the short term, will remain significant until 2020. Furthermore, as the U.S. possesses large basins of wet shale gas (sample composition: 85% methane, 6% ethane, 9% other natural gas liquids), the U.S. has achieved a competitive advantage not only in energy, but also in certain chemicals such as methane-derived fertilizers, ethylene and tightly connected downstream derivatives such as polyethylene and PVC.

Europe's Train Waiting to Depart

In light of these developments, it is not surprising that the industry in Europe is increasingly keen to look at this region's shale resources' potential. This requires a somewhat differentiated perspective: Although shale gas can be found in numerous European countries, the main commercially viable basins are expected to be in the UK, Poland, Ukraine and France, among others (fig.1). Russia also has large resources, but its massive cheap conventional gas reserves have led Russia to sidestep shale gas thus far.

It is frequently stated that European shale gas is not as wet as in the U.S., based on preliminary geological knowledge and initial exploration. However, shale exploration is not advanced enough to substantiate this statement, and there are already indications of natural gas liquid (NGL) deposits in selected areas, such as in Lancashire in the UK. So while NGL opportunities in Europe should not be excluded, any scenario based on European NGL production is still visionary.

Given that Europe is sufficiently rich in shale deposits, why has the European shale gas train not started to move? Simply because the tracks have not been laid.

The crucial element that will enable a shale gas future in Europe is the existence of strong, structured and flexible regulatory frameworks. In the recent past, these have lacked clarity, and there has been little political and public determination to reform them. However, there have been some changes in selected European countries, and by analyzing the most recent trends, we have come a step closer to forecasting shale developments and their potential future effects in Europe.

Over the past two years, drawing an accurate picture of the national prospects and regulatory environments of those European countries ready to open up to the exploration of unconventional gas has appeared equally challenging. A surge of conflicting information and slow-moving regulatory reforms has contributed to the false impression of a fading dynamic. Pioneering countries such as the UK, Poland and Ukraine have been polishing policy instruments in order to welcome investments in the exploration of unconventional gas resources and their future production.

Officially, these countries' policymakers regard the development of onshore domestic natural gas resources as an energy security priority. In June, the Polish treasury minister indicated that shale gas was a matter of "national interest," and the UK's and Ukraine's governments issued similar statements. Governments have created and reorganized departments and assigned new duties to design strategies and positive actions on licensing, hydrocarbon taxation and the streamlining of regulatory requirements.

Regulatory Progress

Ukraine and Poland have taken legislative action toward new, improved licensing regimes in order to create more confidence for investors. In Poland, even if national regulatory frameworks still require adjustments, exploration licenses should, by 2014, include a right to go toward production without the need for operators to be fully reassessed by the licensing authority. The new law in Poland will also authorize operators to start building works, but not drilling, before finalizing environmental permits. Permits for subsoil activities and licenses in Ukraine are expected to gradually open up to foreign investors with the vote of the revised Ukrainian Subsoil Code, possibly in 2013. Foreign investors are also invited to enter into production-sharing agreements (PSAs). In the case of Ukraine, the local law on PSAs was revised in November to include unconventional gas resources while automatically granting a subsoil license to investors contemplating PSAs. The United Kingdom has no plan to introduce a specific licensing regime for unconventional resources. The existing landward licensing regime will, however, be revised to include new terms and durations for onshore licenses. Licensing and planning procedures should also be streamlined for onshore developments.

The speeding up of reforms aimed at attracting investments does not mean that the governments of Ukraine, Poland and the United Kingdom are ready to compromise on environmental or climate-change issues. Environmental and planning permissions remain standard conditions to any activity. In each country, governments are determined to improve collaboration between agencies and bodies involved in licensing and environmental permitting to develop smarter regulation processes. This ambition was realized in the UK in March with the introduction of the Office of Unconventional Gas and Oil within the Department of Energy and Climate Change. According to its mission statement, the role of this office is notably to "administer, create and promote an efficient and accessible regulatory process." It is expected to coordinate with other interested offices.

EU Welcomes Possibilities

As figure 1 indicates, certain European countries still have bans or moratoria on hydraulic fracturing, thus preventing even test exploration for unconventional resources. But even in this handful of European territories, policymakers have been looking carefully at how to better approach exploration for unconventional hydrocarbons. The European Union's commission and parliament's overall positive views on unconventional resources also invite national governments to look at this resource with less skepticism. Some national parliaments have also sought to obtain the official opinion of their respective national science academies on unconventional resources and fracking. They have publicly asked industry representatives to identify whether sustainable forms of extraction would be available as an alternative to hydraulic fracturing.

These scientific and public statements are now accessible through public conference proceedings from, for instance, the French Académie des Sciences, the parliament and official reports from the UK's Royal Society and Royal Academy of Engineering, all available online. These high-level initiatives show that despite some still strong public opposition to hydraulic fracturing, policymakers in Europe are determined to identify whether their industries could develop unconventional gas to include more domestic resources in their energy mixes and reduce their external energy bills. Reforms also show positive public support in favor of future investments, R&D and the development of new local onshore upstream and downstream sectors.

Chemical Industry Outlook

Despite all the outstanding hurdles for shale gas production in Europe, the regulatory dynamic looks clearly positive. It is widely accepted that the development of unconventional gas resources in this region will not be as sizeable as the one experienced in the United States. However, there are numerous indications that it won't be negligible either.

Also, once the first larger projects are announced in selected countries, it seems reasonable to assume that regional gas prices will tend to stabilize. As shale gas will be only a small part of the whole energy mix, significant gas and energy price drops across Europe are unlikely, but sharp gas price increases and volatility will be abated. Furthermore, a larger regional market fuel competition will affect the sourcing of energy. Companies buying gas from Russia will have a stronger bargaining position toward Gazprom.

According to our analysis, managers of chemical plants in Europe have to plan to at least 2020 without significant supportive effects of regional shale gas production. In the midterm to long-term perspective, those plants with direct access to shale gas producing areas may have energy and possibly feedstock advantages. Shale gas production in Ukraine, for example, could fuel the country's fertilizer and amine compounds business, based on cheap methane as feedstock and energy carrier.

It will certainly be sensible to keep a close eye on the progress and policy changes in pro-shale gas countries, such as Poland, Ukraine and the UK, to be better positioned to identify raw material and energy opportunities before competitors do.

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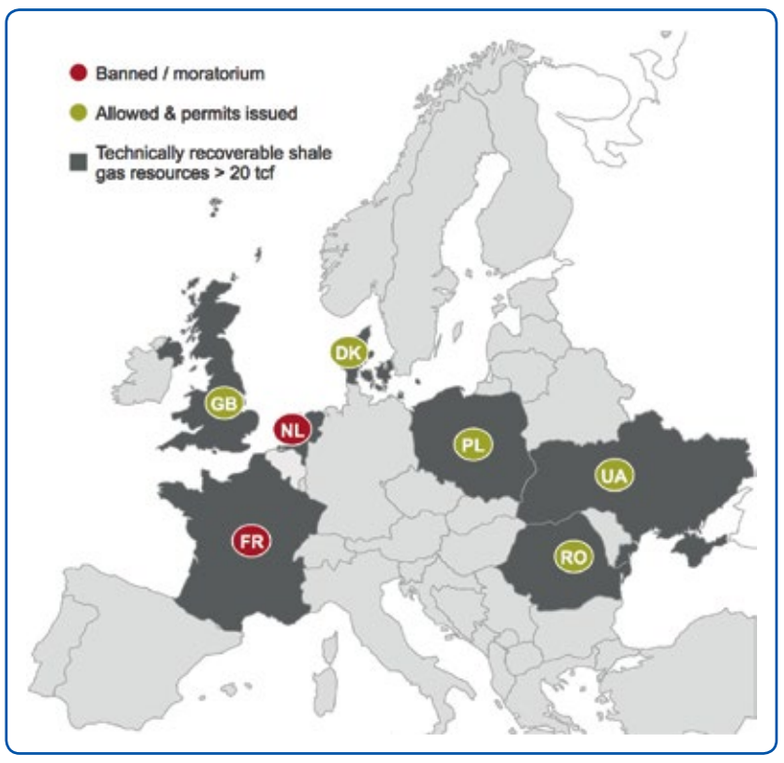

Pharma in the Outcome Era

Blockbusters Not Expected to Set the Tone of the Future

Change Is Happening – Pharma is entering the outcome era. Today, launching a new drug means the companies are forced make a larger effort to prove the drug's additional value and benefits. The obligation to prove the best possible health outcomes and additional benefit is the prerequisite to achieve adequate price and reimbursement. The report "Launch Excellence in the Outcome Era" published recently by Camelot Management Consultants shows that the industry seems not yet to fully realize the advent of this new era with all its consequences.

Axel Sinner
Camelot Management Consultants

According to the Camelot study, as many as 30% of respondents still anticipate new product launches in blockbuster style — focused solely on regulatory approval pre-launch and a strong sales force post-launch, with little change to the launch process. However, the report is clear: In order to achieve launch excellence, the entire process of launching must adapt. Changes in timing of the launch phases are already palpable, and even though respondents seem unaware of the extent to which the launch process will be rattled, they already realize some fundamental changes: Every launch phase is strongly affected by an increase of cross-functionality. This increasing cross-functionality is mirrored in the time required for each launch phase. As pre-launch market and stakeholder preparation has become more critical, pharmaceutical companies are initiating their product launch campaigns much earlier than in the past. This fundamental change also extends post-launch: Now companies need to demonstrate long-term, superior health outcome under real-world conditions (fig. 1).

The report further highlights that given the increasing importance of cross-functional collaboration, only clear governance and excellent project management can lead to launch excellence. To build a compelling value proposition, the whole launch team needs to focus early on proving a compound's additional benefit, ensuring the proper design of clinical trials with valuable endpoints. The market access function builds the insights on where value lies for patients, health technology assessments (HTAs) and payers; also important are the necessary comparators, biomarkers and endpoints. They need to pass on this information to clinical development throughout the entire development process. To achieve the optimum results in later phases, teams have to collaborate to answer questions such as the commercial potential of alternative sub-indications, different market conditions and acceptance for a new drug and consumers' needs. The survey indicates that cross-functional collaboration represents a fundamental change in the way launch teams used to work.

What's more, results also show that many organizations find it difficult to adapt to such changes. Also the clear definition of roles and responsibilities within an organization ranges among the top launch challenges. Especially against this background, solid governance mechanisms and excellent project management are paramount to ensure well-executed coordination and communication — during all launch phases and across all involved functions. Yet, in terms of governance and decision agility, the survey finds 0% of respondents evaluating launches they keep track of as excellent.

Stakeholder Management as a Launch Strategy

Launch excellence does not only imply outstanding cross-functional collaboration but also a rising consideration of stakeholder management as core element of the launch strategy. Launching in the outcome era is aggravated by an increasingly expanded stakeholder landscape. In total, 96.8% of survey respondents believe this to be a driver of the soaring complexity of the launch process. Beyond the traditional doctors and key opinion leaders (KOLs), the tremendous expansion of the stakeholder landscape ranges from governments, payers and HTAs to patient advocate groups.

Above that, individual stakeholder impact on launch success is on the rise. Payers and patients are increasingly influencing decision-making — they have a say in which drug offers the best value for money in terms of improved health outcomes or economic benefit. Thus, to succeed in the outcome era, excellent market preparation is the key. Stakeholders have to be convinced of the value of the new drug. Ideally, they already await the product at launch. Consequently, respondents confirm an effective stakeholder management is becoming one of the most critical elements in determining future success. Interestingly, at the same time they diagnose "satisfying different stakeholder needs" as the biggest challenge (fig. 2).

'Do More'

The report shows that launching a drug today requires pharma companies to do more. They need to invest in the compilation of cost-benefit dossiers and construct value arguments to satisfy pricing and reimbursement requirements in different markets. They need to focus a great deal on an elaborate stakeholder management and to ensure excellent market preparation for increasingly parallel market entries. Hence, the survey highlights a growing number of activities and the involvement of many more external parties.

In connection with decreasing revenues and profit margins and the continuous downward price pressure from payers, "doing more with less" should become a growing concern for companies. Correspondingly, the survey found that launch budgets decrease in absolute terms, but rise in relation to the value/volume of launches. Interestingly enough, limited resources seem not yet to be an issue for launch teams and there are still almost a fifth of respondents who claim cost-efficiency as only a subordinate success factor. Also, when asked about their status of excellence in cost-efficiency, respondents' assessment turned out particularly weak — 40% of respondents indicated "fair" and as much as 10% see "room for improvement." However, sooner or later, tight budgets will make it imperative to strive for rigorous cost-efficiency in every step of the launch process. Accordingly, results suggest that 80% of respondents agree an essential aspect to counter constrained budgets is to increase launch excellence (fig. 3).

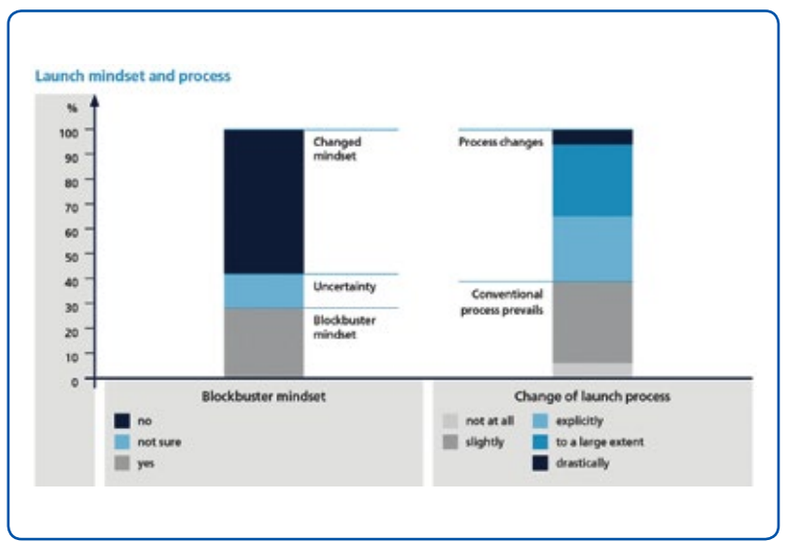

Fig. 1: A considerable part of respondents still seem to launch blockbuster-style without expecting the launch process to change much.

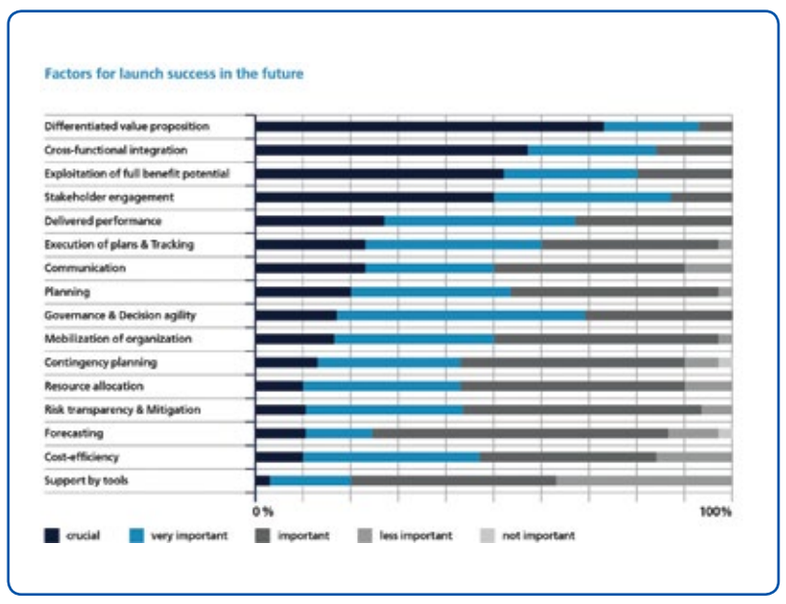

Fig. 2: Survey respondents identify "satisfying different stakeholder needs at the same time" as the biggest challenge, followed by regulatory uncertainty.

High Stakes around the World

The stakes in this game are high, with Germany already having implemented its Act on the Reform of the Market for Medicinal Products (AMNOG) price reforms and the UK looking to follow suit in 2014 with its value-based pricing reforms. AMNOG draws a direct connection between added value and the level of reimbursement — through international reference pricing, failure to satisfy the requirement of added benefit will have a domino effect for the price of the new compound in other countries. The report also explains the effects of the outcome era in emerging markets. Countries in the BRIC region are adapting both to U.S. Food and Drug Administration and European Medicines Agency standards and to recent pricing and market access developments. The Brazilian government manages its healthcare spending by comparing market prices to reference prices in other countries and has recently launched the National Commission for Incorporation of Technologies in the Unified Healthcare System (CONITEC). CONITEC is a HTA body which that bases its strict reimbursement requirements on a product's safety, efficacy, cost-effectiveness and impact on the national drugs budget against comparators.

Within this new launch environment successful launches will need to:

- Expand the market, rather than just gain market share
- Re-define therapy guidelines
- Develop excellent cross-functional collaboration and teamwork
- Develop smarter pre-launch activities, with increased investment in the early launch phases
- Have stakeholders awaiting the product with its differentiated positioning at launch
- Win recognition for creating multi-stakeholder value
- Exceed peak sales expectations.

Lastly, respondents did not expect an increase in the number of launches. The industry should be increasing the number of truly innovative launches and introducing them faster if the sector was not to shrink. Companies must be highly alert to the fact that their environment will be undergoing continuous change, which will inevitably force the launch process to adapt.

Dr. Axel Sinner is head of competence center Pharma Commercial at Camelot Management Consultants

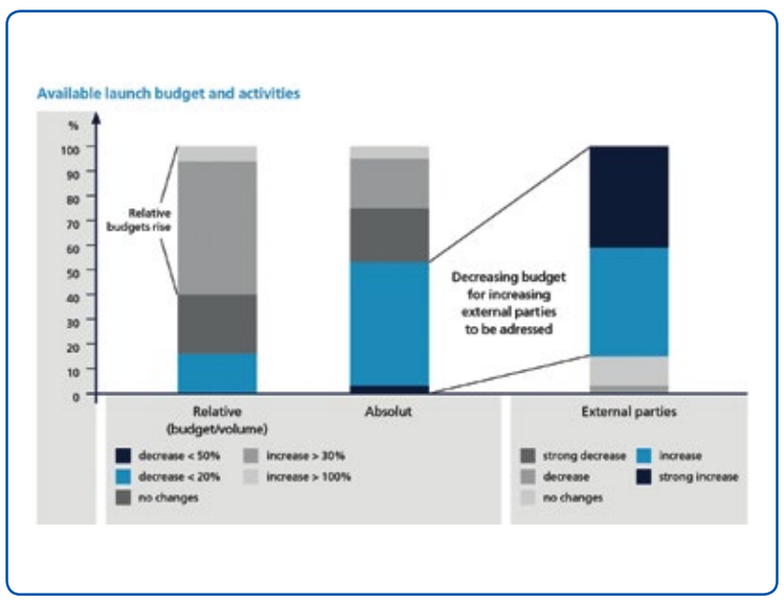

Fig. 3: Doing more with less: A significantly increased number of external parties need to be managed while the available absolute budget strong decreases.

More Online

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New Territory for New Drugs

Launch Excellence for Medicines in Times of Global Market Access Challenge

Pioneering the Worldwide Health-Care Market – After years of showing low productivity, research and development in leading pharmaceutical and biotech companies is starting to deliver on its promises. The number of new molecular entities (NMEs) registered with the U.S. Food and Drug Administration has reached its highest level since 1997. Pharmaceutical companies have restructured R&D but continue to invest in the development of new therapies. The valuations of biotech companies have reached record levels. A launch should follow this approval, but complexity in the global market has substantially increased. Every country faces different macroeconomic dynamics, and pharmaceutical companies have to cope with substantial market access challenges. Dr. Thilo Kaltenbach and Sebastian Herzig of Arthur D, Little outline how pharmaceutical companies need to transform their launch approach to maximize the value generated by investments in R&D.

Number Of Launches Increasing

Last year, the drug approval department of the U.S. FDA recorded the highest number of NME launches since 1997. The number of launches was clearly above average, and, in addition, 41 new drug applications have been sent to the authority. This is good news after years of painful analysis on low productivity, ongoing restructuring in R&D, commercial reorganizations and increasing pressure on medical evidence and prices.

Different Dynamics Per Country

In the past, it seemed natural for big pharmaceutical companies to launch NMEs in known business areas and territories. Customer structures were well known, and new products could easily be integrated into existing clinical practice. However, with changed dynamics in gross domestic product and specific local market access requirements, changes need to occur. Companies have to transform their launch approach to meet these changes and ensure excellent results.

Today, after the rise of the emerging markets and the financial-crisis-related downturn of southern European economies, we need to acknowledge three different types of markets according to their GDP dynamics: ever-growing emerging markets such as China; mature markets with little growth such as Japan, Germany and the U.K.; and declining markets such as Greece, Portugal and Italy.

The dynamics affect types of market access challenges put forward by governments and payers: Growing countries tend to limit growth of health-care spending as a percentage of GDP; this means first of all that there is growth in the pharmaceutical and health-care sector within these borders, alongside the GDP. The same countries also allow for patients' co-payments and thus also use the positive GDP dynamics to foster pharmaceutical market growth from the private sector. While patients in Brazil and Russia are used to paying for certain medications directly out of their pockets, more and more private insurance schemes are introduced in China to take over costs that the basic insurance system does not cover.

In contrast, the stagnating mature markets impose very sophisticated means to assess the value of drugs compared with existing therapies. The German Institute for Quality and Efficiency in Health Care (IQWiG) assessment following German health-care reform AMNOG as well as the U.K. logic of quality adjusted life year (QUALY) are perfect examples of this.

In the third market type, governments and payers in the declining southern European countries have the tendency to introduce rigid and immediate price cuts, simply to keep the basic health-care provision intact in a crisis.

Pharmaceutical Industry is Losing on Balance of Power

It seems that in many markets pharmaceutical balance of power is shifting continuously from pharmaceutical companies toward the payer side. In times of increasing market access challenge, companies need to defend the value of their products and nevertheless face significant price pressure in their core business.

What does this shift of power mean to pharmaceutical companies' launch approach? The old rules just don't suffice anymore to achieve launch excellence. Segmenting markets, analyzing demographics, carving out a unique selling point and key differentiators of the drug, and convincing opinion-leading clinicians are still fundamental. Furthermore, the innovative solutions required to excite patients, convince payers and ease prescribers need to be tailored to the specific local market. What makes it difficult is that there is no silver bullet. Each product needs to cleave its specific way to the patient in every single market. It is still essential that the drug is unique and addresses conditions of utmost medical need. However, defining creative solutions to maximize the number of patients that benefit from the new therapy is a key success factor to maximize its potential. A successful launch strategy therefore needs to give freedom and empowerment to each part of the organization to succeed with defining these creative solutions while at the same time it is providing transparency and launch control, and is pushing for best practice implementation.

How Pharmaceutical Companies Respond

Although pharmaceutical companies seem hesitant to leave the old patterns of success and try innovative models, pioneers in the industry have invented quite a few best practice strategies. For example, Roche has helped Chinese insurance giant CPIC through collaboration with Swiss Re to define a complementary cancer insurance product that attracts more than 10 million Chinese people already.

Some companies charge nothing to patients for the last treatment cycles for severe cancer to relieve the financial pressure on families and encourage doctors to initiate life-saving therapies, knowing the patient will not have to cease because of lack of funding. At the same time, some large Chinese pharmaceutical players enter the market for hospitals — a strategy of close alignment with the objective to launch new products in a closed system of payers and providers, leveraged also by new inventions of mobile health care.

Some companies are very good at creating closed and integrated health-care systems, in which it is much easier for them to launch new products and services than launching them right into an open and highly competitive system. German Fresenius has done that with the integration of medical devices, pharmaceutical products and private hospitals. Linde has recently created an integrated world of services around patients with chronic lung diseases. The company is not only delivering the necessary devices but also operates hospitals, rehabilitation and respiration centers to support patients at each stage of their journeys. Samsung Healthcare in Korea implements a similar strategy, while U.K.-based private health insurance Bupa is expanding into health provision from the payer side.

Implications On Launch Excellence

These trends imply that the launch approach needs to change dramatically. It is clear that products need to differentiate much better from peers and existing therapies based on a superior value they provide. A product that can prove a dramatic improvement of disease conditions will always be prioritized and finally reimbursed at reasonable price premiums by insurance companies. In order to protect these products in a stronger competitive environment against comparable drugs, it will help to create significant value-adding services around it in order to sell a solution, in a closed system.

So how does that translate into a successful strategy? Companies need to create solutions for the medical community, payers and the patient. If they are able to provide positive customer experience with each of the stakeholders and specifically for the patients, their value will be high and translate into profitable business.

The New Key Success Factors for NME Launch

The key success factors in the new world addressing these trends are:

- Implement purchasing-power-adjusted pricing scheme
- Search for win-win solutions with payers
- Create positive customer experiences with patients
- Sell solutions, not products
- Adapt corporate strategy locally to seamlessly fit new therapy into system

In order to successfully implement these factors, creative thinking is needed. Companies must hire the best people and create an environment of transparency, trust and freedom in order to achieve that. They need a local footprint. A Chinese health-insurance strategy requires sound knowledge of the local health-care ecosystem with its specific incentive structures, regulations and customer needs. In order to develop a differentiated pricing strategy in Europe, sound knowledge of trade routes, invoicing pathways and regulations are essential.

There is much more than cash discounts to offer payers fair conditions for reimbursing groundbreaking new therapies. Elements of warranty, risk sharing, payment terms, and free of charge services can be used in order to have an affordable package around a medical value to be provided.

And it certainly helps to put the patient in the center, to transform patients into consumers and create positive customer experiences. Why not create a Starbucks-like shop for diabetes patients? Or create online access to the world around the needs of a person suffering from Morbus Gaucher? How about offering a one-stop care center to support Amyotrophic Lateral Sclerosis (ALS) patients at each stage of their threatening disease pathway? And why not install a platform that evaluates cancer patients' eligibility to participate in a clinical trial for their specific condition?

There are many more innovative solutions to add to the standard launch plans companies have used for years. Still, preparations need to start early. A clear vision of the future health-care ecosystem is essential. Market access and commercial departments have to work closely with R&D teams from phase two onward to ensure the necessary health and economic aspects are implemented into trial designs. Study participants should be interviewed on their daily disease-specific needs in order to develop defined service solutions.

Challenging times are testing creativity and putting more pressure on change and value provision. Pharmaceutical companies will have to transform their approach to launch excellence, implementing new business models for groundbreaking therapies.

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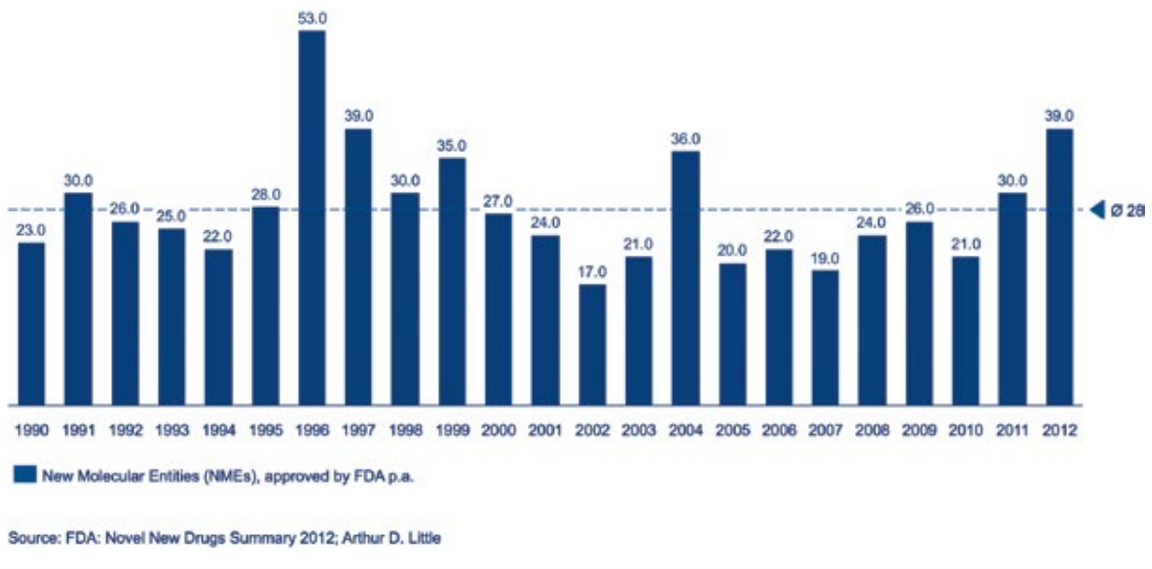
Fig. 1: Year 2012 shows largest number of New Molecular Entities since 1997. © Arthur D. Little



Source: FDA: Novel New Drugs Summary 2012; Arthur D. Little

Amgen Buys Onyx for $10.4 Billion Amgen will buy cancer drug maker Onyx Pharmaceuticals for $10.4 billion. The acquisition represents the fifth-largest biotechnology deal in history and gives Amgen full rights to Kyprolis, the new multiple myeloma drug that analysts expect to reach annual peak sales in excess of $2 billion. The world's largest biotechnology company will also gain a revenue stream from the liver and kidney cancer drug Nexavar that Onyx shares with Bayer, as well as royalty payments on Bayer's much newer colon cancer drug, Stivarga, and potential future royalties on an experimental breast cancer drug being developed by Pfizer.

Pharmstandard to Buy Ingredient Supplier for $590 Million Russian drugmaker Pharmstandard has agreed to buy a supplier of ingredients for its flagship anti-viral and anxiety drugs for $590 million, as part of a plan to spin off its OTC business. The plan to purchase Bever Pharmaceutical prompted a sell-off in Pharmstandard's shares when it was first announced in July. Pharmstandard said it would pay $542 million in shares and $48 million in cash to buy Bever from Pharmstandard board member Alexander Shuster, who will become Pharmstandard's second-largest shareholder with an 18.7% stake.

Teva to Drop Depression Treatment after Trial Fails Generic drug maker Teva Pharmaceutical Industries said it will stop the development of a depression treatment after a late-stage trial failed to show the drug was more effective than a placebo. The third late-stage study tested Nuvigil, or armodafinil, as an adjunct therapy in adults with major depression associated with bipolar I disorder. While the first late-stage trial had positive results, the second trial had failed. Analysts said the drug did not present much of an opportunity for Teva in a market where antidepressants for bipolar disorder are already available.

Global Support Initiative

Growing Demand for Service and Education in Process Automation Technology

Always Learning – The ever-growing possibilities with automation technology have created an increased need for service and training. CHEManager Europe took an in-depth look at Emerson Process Management's strategy for consulting, training and service.

Lukoil's offshore platform in the Yuri Korchagin oil and gas field.

Emerson's SmartProcess Distillation Optimizer has been applied to five of the six gas distillation columns at MOL's Algyõ gas plant in Hungary.

Emerson Process Management continues to strengthen its education, service and support capabilities for customers in Europe, with the opening of six new service centers and three new education centers. The new centers are part of Emerson's on-going global support service initiative which also includes expanding and upgrading many of its existing facilities.

The service centers are dedicated to meeting customer needs for fast and local service with an extensive portfolio, ranging from essential services to total care programs, tailored to the specific needs of individual customers. Emerson's educational facilities meet the growing demand for specialist training to help customers become more effective, and to help to replacing the skills and experience that are being lost within the process industries.

"Critical to supporting our customers' needs is the ability to offer local training, support and service facilities, backed up by highly qualified trainers and specialists, using advanced equipment such as simulators," said Erik Lapre, vice president Service Europe, Emerson Process Management. "These new and expanded facilities are part of a broad initiative to continually enhance and upgrade our European support capabilities."

Over the last 12 months, Emerson has opened new service centers in Germany, Netherlands, Italy, Spain, Hungary and Kazakhstan. Staffed by trained, certified personnel, the range of services offered includes field service and diagnostics, training and parts delivery, valve maintenance and repair, turnaround support, and spare part inventory management.

These services are dedicated to customers in industries like chemical, oil and gas, refining, pulp and paper, power, water and wastewater treatment, mining and metals, food and beverage, life sciences and other branches. Lapre added: "Service and support is becoming an increasingly important part of a lifecycle care package. By growing the number of local service centers, and expanding the scope of services and support those centers can provide, our customers understand that we are ready to help solve their problems, whenever and wherever the need arises."

Emerson installed an integrated solution for the new hydrocracking complex at the INA Rijeka refinery in Croatia.

Enhancing Operators' Skills at Lukoil in Russia

Lukoil is using a PC-based training simulation system to prepare new workers for safe operations at the Russian oil company's offshore facilities — in this case the fixed offshore ice-resistant platform in the Yuri Korchagin oil and gas field — as well as to certify and upgrade the skills of current employees. The training complex is based on Emerson Process Management's DeltaV automation system and Kongsberg's K-Spice software.

The simulation includes oil and gas production and treatment processes, as well as operation of the platform's power complex, utilities and life-support systems. The training solution reflects the platform's full-scale DeltaV digital automation system, DeltaV SIS safety instrumented system, emergency shutdown system, and fire and gas systems, and it includes control, start-up, and shutdown procedures for the platform's key process units. The high-fidelity simulation also enables Lukoil engineers to see the effects of potential process or control changes. They can use the operator training solution to make simulated process changes, commission and decommission equipment, and start-up and shut-down platform installations and systems. Each training scenario includes an automated evaluation system to assess operator performance.

Increase of Productivity at MOL Gas Processing Plant in Hungary

MOL Group is one of Central Europe's leading international oil and gas companies. Its Algyõ plant, located near Szeged can process up to 12 million m^3 of gas per day. The gas processing plant includes three columns on each of the two distillation column trains.

Emerson Process Management's support services have helped the MOL Group increase throughput, improve product quality and reduce energy usage at the Algyõ gas plant in Hungary. Control loop audits, advanced process control project management, and model predictive control project support, have together helped MOL achieve savings of over €9 million since 2006.

Erik Lapre
Vice President, Service, Europe, Emerson Process Management

Emerson provided support for the on-going energy-saving initiative of MOL by setting up model predictive controls for the gas processing plant. The project was managed by Emerson's European strategic services group, with support from the local Emerson team in Hungary. Emerson's distillation solution has now been applied to five of the plant's six gas distillation columns, reducing energy costs by €1.2 million per year.

The most recent project at the plant was a performance audit of the model predictive control based on MOL's current operation and plant operating objectives. Following Emerson's recommendations, changes have been made to the control system for two of the columns. The changes included modifying the structure of the regulatory control scheme; introducing a new component to the model predictive control scheme to better predict and account for impurities; and updating the procedure for using laboratory data within the calculations.

The changes made at the plant have also reduced the site heat load, which prompted MOL to look at how best the heat supply can be managed for the whole site. Emerson is supporting this project with a study to evaluate the heat balance across the site, as well as the heat loads on the furnace. Emerson's support will include designing and implementing the recommended modifications. Emerson's industry and technology expertise can enable continuous improvement of plant systems and processes.

Meeting European Fuel Specifications at INA Rijeka Refinery In Croatia

The installation of integrated automation and safety systems on three units at a new hydrocracking complex at the INA Rijeka refinery in Croatia was part of an upgrade to enable INA Rijeka refinery to produce Euro V quality fuels in compliance with EU environmental standards.

Because of the significant size of the overall project, the construction of each process unit was contracted out to a different Engineering, Procurement and Construction (EPC) company. Emerson provided a single point of contact for the three EPCs and was contractes also as a Main Automation Contractor (MAC) for the sulfur recovery unit, while INA took sole responsibility for the automation systems, and coordinated the engineering approach. This ensured that fixed scopes, time schedules, budgets and warranties for each project were not adversely affected.

The integrated solution for the hydrocracking complex is based on Emerson's PlantWeb digital plant architecture including the DeltaV automation system and DeltaV SIS safety instrumented system. Emerson also provided field instrumentation and control valves. Emerson's AMS Suite predictive maintenance software is being used to configure devices on the three processing units. Emerson's services team ensured that the installation was completed on time and Emerson will continue to provide a comprehensive lifetime support package to help INA Rijeka maintain operational efficiency.

INA has also invested in Emerson's comprehensive Guardian support package which helps maintain control system software and computer operating systems. Guardian provides a single-point source of critical services and system information, to help with the effective management of a DeltaV digital automation system throughout its life cycle. It includes expert technical support, remote system diagnosis, software updates and system analysis reports.

Control Valve Training in Cernay, France

As part of its global service initiative, Emerson Process Management has opened a new European Education Facility at the valve manufacturing center of excellence in Cernay. Introduced to meet the valve training requirements of customers from across Europe, the facility aims to support companies that want to minimize unscheduled shutdowns, reduce maintenance costs and optimize their plants.

The new education facility offers a broad range of training tools covering all aspects of control valves, including engineering, optimization, diagnostics and maintenance. A unique feature of the facility is its Flow Laboratory, which provides a sophisticated training infrastructure for control valves and instrumentation. The laboratory includes a flow loop and a dynamic performance loop, both powered by Emerson's PlantWeb digital plant architecture. This is equipped with multiple communicating systems, software and instrumentation, allowing participants to learn how control valve technologies affect the dynamic performance and impact their processes.

Dr. Volker Oestreich, CHEManager Europe

▶ www.emersonprocess.com

chemanager-online.com/en/tags/process-automation


Thomas Hartmann


Eva Müller

Thomas Hartmann has been named managing director and industrial relations director of BASF Coatings with effect from Sept. 1. Hartmann, who succeeds **Eva Müller** in the position, will retain his position as global head of human resources at the BASF subsidiary. Müller is assuming new responsibilities within the Ludwigshafen, Germany, group. Hartmann, who had also been site manager of the Münster, Germany site transferred this function to Dr. Renate Bork-Brücken on July 1, 2013. Her responsibilities include development of the German sites of BASF's Coatings division. Bork-Brücken is a chemist and joined BASF in Münster in 1988. From 2007 to 2013, she headed the Human Resources department of BASF's European Shared Service Center in Berlin.

Johnson & Johnson has appointed **Jesse Wu**, currently worldwide chairman of its consumer business, as chairman of J&J China, reporting directly to company Chairman and Chief Executive **Alex Gorsky**. The diversified healthcare company said it is changing reporting lines in an effort to increase sales and centralize corporate oversight. The reorganization comes as pharmaceutical companies are in the spotlight in China after the government began investigating bribery accusations against British drug maker GlaxoSmithKline. J&J spokesman Ernie Knewitz said the changes in China will help increase sales and add oversight to the "whole enterprise" there.


Karim Hajjar


Bernard de Laguiche

Bernard de Laguiche will end his 26-year career at Solvay of which he served seven years as group chief financial officer. The Brazilian and French national will pursue personal interests in Brazil; he will stay on at Solvay as a non-executive board member. **Karim Hajjar** will succeed de Laguiche as CFO and join Solvay's executive committee on Oct. 1. Before joining Solvay, Hajjar, was director Finance and Planning at Imperial Tobacco Group. He started his career at Grant Thornton Chartered Accountants in 1984 and moved on to Royal Dutch/Shell where he was deputy CFO of Shell Chemicals between 1995 and 2004. Thereafter, Hajjar was CFO of Tarmac Group from 2005 to 2009 and its managing director until 2010.


James Stewart

James Stewart will succeed **Frédéric Wohlwend** as chief information officer of Merck KGaA on Oct. 1. Stewart joined the Merck Serono biopharmaceutical division in 2011. Prior to joining Merck, he had a long career with MSD (Merck & Co. in the U.S.), where he progressed through several global leadership roles in the U.S. and Europe before he moved on to Merck KGaA in Germany. Stewart obtained MBA degrees in Finance and Managerial Sciences, following a Bachelor of Science in Information Systems and Business Administration from universities in New York and New Jersey.


David Allen

David Allen has been appointed as AkzoNobel's new Head of Integrated Supply Chain. He will officially take up the position on Oct. 1. Allen joins AkzoNobel from China National Bluestar Group, where he has held the post of chief operating officer since 2009. Prior to joining Bluestar, he worked for General Electric and SABIC in various operations, manufacturing and logistics roles. David Allen will report directly to CEO Ton Büchner.


Patricia Malarkey


Robert Berendes

Patricia Malarkey will lead Syngenta's R&D department and join the executive committee with effect from Jan. 1. The position of R&D head has been led ad interim since October 2012 by **Robert Berendes**, head of Business Development. Malarkey, who began her career in toxicology, has over 15 years of experience with the company and has held senior scientific positions in crop protection, seeds and biotechnology in Europe and the U.S. In addition to Malarkey, Jonathan Seabrook, head of corporate affairs, will join Syngenta's executive committee on Oct. 1. He has more than 10 years of experience with Syngenta and leads a global team with responsibility for communicating the company's contribution to society and for managing relationships with a broad range of stakeholders.


John Ansbro

John Ansbro has joined the management board of GEA Refrigeration Technologies as new chief technology officer. He succeeds Guido Beyss, who has left the company. In his new position, Ansbro will be responsible for production and development activities of the GEA segment for refrigeration technology throughout the world. He will report to Dr. Hugo Blaum, segment president of GEA Refrigeration Technologies, who is also a member of the executive council of GEA Group and is responsible in the council for innovation. In addition to his role as CTO, JAnsbro will continue to act as sales president for America and as CEO of GEA Refrigeration North America.

Workshop "New Legislative Regulations for Chemicals in China", Oct. 21, Frankfurt

The State Council of China has published a revised version of the Regulations on Safe Management of Hazardous Chemicals in China from 2011 (Decree 591). The main obligations under the regulations lie by manufacturers of substances in China and importers of substances into China. The new regulation is without doubt the most complex chemical legislation in China. To understand this complex matter Dechema, the organizer of this workshop that targets anyone producing chemicals in China or importing chemical substances into the country has invited legislative authority experts from China for detailed explanations on issues such as how to register chemicals in the PRC, how to achieve the MSDS & Safety Label or how to implement a physical hazards & classification management.

► http://events.dechema.de
huang@dechema.de

CPhI Worldwide 2013, Oct. 22-24, Frankfurt

The leading global exhibition on pharmaceutical ingredients and intermediates and related research and manufacturing services attracts around 29,000 senior pharma professionals from 133 countries. About 2,200 exhibitors from major supplier markets like China, India, the U.S. and emerging markets including Russia and Malaysia cover ingredients, APIs, excipients, finished dosage, contract services, packaging or machinery in 20 dedicated exhibition zones. Visitors attending CPhI will keep abreast on the latest industry developments and stay up-to-date on market news and trends.

► www.cphi.com

K 2013, Oct. 16-23, Dusseldorf

The flagship fair for the global polymer manufacturing and plastics processing industry – K 2013 – is continuing where the 2010 fair left off. K show is a trend barometer and innovation forum for the entire sector, with the latest developments and optimized technologies being premiered here every three years. Some 3,000 exhibiting companies including all big-name players of the international plastics and rubber industry will present their offers from the fields of machinery and equipment for the plastics and rubber industry, raw materials, auxiliaries, and semi-finished products, technical parts and reinforced plastics. Suppliers from Germany, Italy, Austria, Switzerland and the U.S. will again be particularly strongly represented, while the number of Asian manufacturers from China, Taiwan and India has again risen.

► www.k-online.de

CropWorld Global, Oct. 29-30, Amsterdam

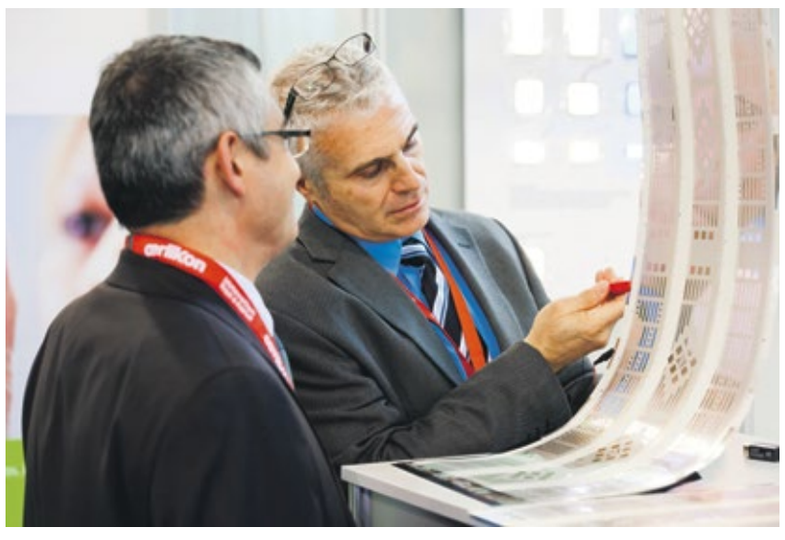
CropWorld Global provides a meeting place for the global agrochemical industry to review, display and discuss new products and business opportunities. The international agricultural event will attract approximately 2,000 participants from over 75 countries engaged in crop production to learn about the latest macroeconomic and political influences impacting on the industry and the latest technologies designed to increase output in a sustainable way. Through an integrated modular conference, speakers will delve into the political, commercial and technical topics ranging from the impact of regulatory changes to assessing modern plant breeding and soil management techniques.

► www.cropworld-global.com

PE2013 Examines the Key to Manufacturability

Event Show To Highlight Future of Plastic Electronics

Trade Show – Materials, manufacturing and processing technologies as well as device integration are at the focal point of the Plastic Electronics Exhibition & Conference 2013 in Dresden from Oct. 8-10.



The real promise for the future in plastic electronics is expected to be founded on solution- based printed devices, applications and products on flexible substrates. Considerable progress has been made over the last 12 months, and a whole class of new products is expected to enter the respective markets in the midterm (three to five years). This topic area is comprised of a variety of products, ranging from printed batteries to organic based sensors and printed RFID tags. The evolving "ecosystem" in integrated smart systems involves extensive cooperation among applications developers, materials firms, printers, equipment makers and a wide range of companies making printed electronic components. It takes a complete printed electronics supply chain to develop and to manufacture fully integrated products. In most cases this demand for integration competences and resources exceeds the scale and scope of a single company. Manufacturing, processing and tooling issues will be at the focus of attention of the Integrated Smart Systems Session, with presentations from companies such as STMicroelectronics, MC10, ISORG, Plastic Logic and others.

The news about the acquisition of Novaled by Cheil Industries, Samsung Electronics and Samsung Venture Investments at a price of €260 million might have gone under the radar. The all-in bet on Novaled shows Samsung's confidence in organic light emitting diodes as a platform technology for display and lighting applications. While commonly used in smart phones such as the Samsung Galaxy S4, Samsung is supposedly also looking to use the lead in material technology in the OLED TV markets as well as in the lighting market. It becomes apparent how important the advancement in materials technology is for the end-user industry. Visitors to this year's Plastics Electronics Exhibition and Conference (PE2013) will find major material companies presenting in the PE2013 conference program and also on the show floor. The PE2013 Conference lines up a number of high level speakers from Nokia, Plastic Logic, Philips Lighting, BASF, Panasonic and others to give their respective views and opinions.

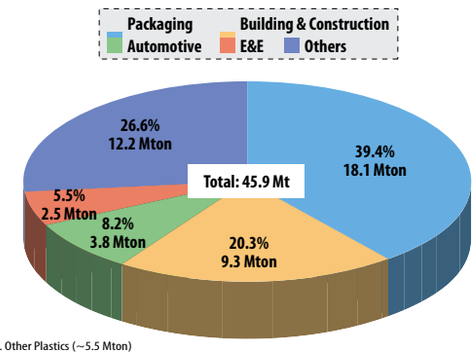
Also the photovoltaic (PV) sector has undergone drastic changes during the last two years. The previous decade was characterized by a fabulous growth of the PV sector, averaging more than 40% per year, turning the sector into a major industrial sector with an annual turn-over in the range of €50 billion. Despite this relentless and prolonged growth, the sector was recently marked by a deep crisis because of the uncontrolled price decline of cells and modules caused by the excess production capacity. It is obvious that this situation also affects the position of flexible organic solar cells as a major PV technology. OPV was originally positioned as a potential low-cost, low-efficiency approach but it is clear that this will not be sufficient to get this technology into the mass market. Flexible PV (DSC, SIG, CdTl, etc.) and flexible organic PV certainly have got potential for application into consumer production but to make real impact it should also make its way into grid based energy applications. A number of companies in flexible PV are presenting their business cases at PE2013, such as Eight19, Disa Solar, Heliatek, and 3G Solar. A very summit of who-is-who in flexible PV at the moment!

► www.plastic-electronics.org

chemanager-online.com/en/tags/pe2013

Automotive: Plastics enable resource efficient mobility

Plastics demand by segment, Europe, 2012



*EU27+N, CH incl. Other Plastics (~5.5 Mton)

Source: PlasticsEurope Market Research Group (PEMRG) – for Central Europe in cooperation with Eastern and Central European Business Development (ECEBD) / Consulting Marketing & INdustrieberatung GmbH

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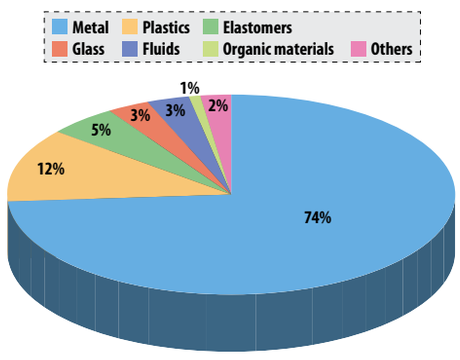
Plastics applications by segments

In 2012, demand from European plastics converters decreased slightly from 47 million tons in 2011 to 45.9 million tons. The relative size of end-use applications remained fairly stable compared to previous years with packaging remaining the largest segment and representing more than 39% of the overall demand (Fig. 1). The packaging sector is followed by building & construction, automotive and electrical & electronic equipment. Others include various sectors such as consumer and household appliances, furniture, agriculture, sport, health and safety. While most applications more or less stagnated in recent years, automotive rose and keeps growing.

The Plastic Percentage in light Vehicles

(December 2012 Medium Sized Car)



Source: Association Française de Mécanique (AFM)

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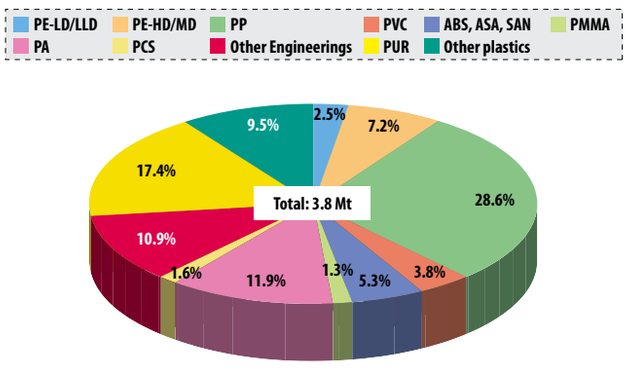
The use of plastics in cars

The use of plastics in the construction of automobiles gathered pace during the 1950s. Today, the average modern car weighing 1,500 kg contains between 12-15% of plastic materials (Fig. 2). This equates to over 2,000 plastic parts of all shapes and sizes. Through an increased use of plastics, automotive manufacturers can address growing environmental concerns, ever tougher legislative measures aimed at breaking the dependence on oil and reducing man-made emissions. Plastics also contribute to a number of exciting innovations, including key components for electric, hybrid and hydrogen-powered vehicles.

Use of plastics in the automotive sector, Europe, 2012



Source: Consulting Marketing & Industrieberatung GmbH

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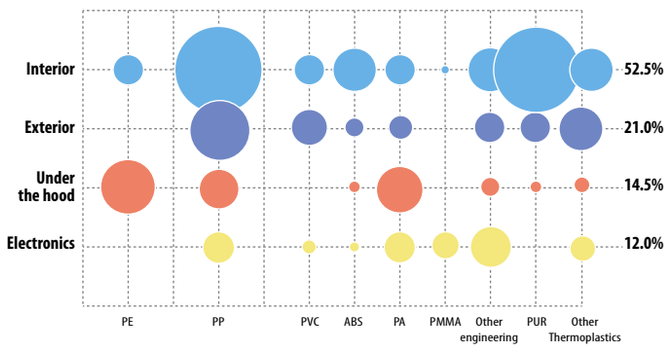
Polymers used in automobiles

Plastics have revolutionized the construction, performance, safety and functionality of cars. Single-mold components have helped manufacturers to decrease vehicle assembly time, quickly introduce design innovations and trim costs. Polyolefins (PE and PP) account for about 38% of polymers used in automobiles (Fig. 3). Other polymers, e.g. engineering plastics like durable polyamide and polyester fibers or high-strength nylon have made seat belts and airbags a reality. Plastics are also used for vehicles active parts like driveshafts. Today, PMMA and polycarbonate even enable plastic glazing applications in the automotive industry.

Use of plastics in the automotive industry by products/applications, Europe, 2012



Source: PlasticsEurope Market Research Group (PEMRG), Consultic Marketing & Industrieberatung GmbH

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Benefits of plastics in vehicles

Plastics have a number of benefits over traditional materials. In the automotive industry they can significantly accelerate production and assembly time as well as vehicle running costs. They also improve design, comfort and safety features. The unique nature of plastics means that they can be found throughout the vehicle. More than 52% of plastics used in modern cars can be found in the interior, e.g. in dashboards, headrests, switches, airbags, seats and seat belts. The exterior, from bumpers to panoramic roofs accounts for 21%, followed by electrical and light applications and engine components that are used under the hood (Fig. 4).

Green Mobility Begins in the Chemistry Lab

Chemical materials are the key to making cars lighter and more efficient. Chemical corporations are therefore working systematically to develop new tailored high-tech materials and the associated technologies that are indispensable to implementing sustainable, resource and climate-friendly mobility around the world.

For example, Lanxess is developing thermoplastic systems for lightweight construction and high-performance rubber products for low-rolling-resistance and thus fuel-saving tires.

Dr. Werner Breuers, member of the Board of Management of the German specialty chemicals producer is

certain: "Chemical materials are the key to making cars lighter and more efficient", he said in advance of the 65th International Motor Show (IAA) in Frankfurt, Germany that ended this past Sunday. "The weight of a vehicle can be reduced immediately by 50 kg solely through the use of our production-proven, high-performance thermoplastics in a wide variety of applications. The results are fuel savings of up to 4% and a reduction in CO_2 emissions of up to 0.5 kg per 100 km," Breuers added.

Lightweight construction of cars will also be addressed in the 2013 edition of CHEManager Europe's supplement VIP-Visions in Plastics, which will be published in October prior to K Show in Dusseldorf, the global flagship fair for the polymer manufacturing and plastics processing industry. ■

The Source of Life – A smiling child, standing in a marine environment, raises its arms in delight. The sea is painted in different shades of blue, uniting the sky and the Earth. Strands of life emanate from the globe like streams. With this imaginative painting, 13-year-old Chiratchaya Kaeokamkong from Thailand won this year's 22nd International Children's Painting Competition on the Environment on the subject of "Water: The Source of Life" in which just under 700,000 children from 110 countries participated. The motto of the upcoming 23rd edition of this competition organized by the United Nations Environment Programme (UNEP) and Bayer is "Food Waste. Save the Planet – Save Food.

Coming Up in the October issue of CHEManager Europe

- Interview with Richard Ridinger, CEO, Lonza
- Searching for Acquisition Targets in China by Dr. Kai Pflug, Management Consulting — Chemicals and Dr. Werner Heil, Beijing Huade Haiyang
- Bioplastics Commercialization in Asia by Bruno Rudnik, SusTech Consult
- Managing The Challenges When Outsourcing Biopharmaceuticals Manufacturing by Jan Gunnar Gustafsson, Bio Evaluation BO AB
- Sourcing Intelligently from India by Ram Balani, FDA Smart
- Highly Potent API Demand is On the Rise byMolly Bowman, Thomson Reuters
- And much more!

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