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Hope Amid Economic Woes

CEFIC Looks for a Boost from the European Chemical Industry's Reputation for Innovation

The European chemical industry has reduced its forecast growth in chemicals output in 2014 in the face of evidence of an economic slowdown both in Europe and in the world's fast expanding markets such as China and Brazil.

Nonetheless, the leaders of the industry at the annual general assembly of the European Chemical Industry Council (CEFIC) in Paris in mid-October expressed cautious optimism about the outlook for next year in the expectation that the current negative economic indicators would show themselves to be merely short-term trends.

Building A Reputation

Also they hope that the improved public image of the industry — as demonstrated by an opinion survey revealed at the conference — will strengthen the position of the sector in crucial negotiations with the European Union on energy costs linked to climate change measures.

The survey, which covered the public across Europe and policy-makers and "influencers" in Brussels, revealed that the industry is being rated more highly than previously for its energy efficiency and its ability to help customer sectors reduce energy consumption.

Also the industry is gaining a stronger reputation for its innovative prowess, which is enabling downstream producers to perform more effectively.

"This (survey) is a good basis to cooperate with the new European Commission and the new European Parliament and provide any support needed to reach the target of more growth and more jobs," said Kurt Bock, BASF chairman and CEFIC's immediate past president.

Competing Amid Climate Change

CEFIC is hoping that the commission will back a new deal on the use of carbon allowances under the EU Emissions Trading Scheme (ETS). This will enable energy-intensive chemical producers to offset the effects of EU climate change measures, which could undermine even further the international competitiveness of the sector.

A week after the general assembly, EU leaders at a summit in Brussels agreed to cut greenhouse gas emissions by 40% by 2030 compared with 1990 levels. The industry has been pressing for a target that would align the EU more closely with the less ambitious emissions targets of the rest of the world.

"Europe represents 12%-13% of global greenhouse emissions," said Jean-Pierre Clamadieu, Solvay's chief executive and CEFIC's new president. "It is not going to save the world by itself."

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Lowered Expectations

Meanwhile, CEFIC highlighted the more immediate economic pressures it is confronting when it announced it was downgrading its forecast output growth for 2014 from 2% to 1.5%.

The new figure is the same as that in its outlook for 2014 issued late last year. It was raised to 2% in June because the industry's performance was better than expected in the first half of the year.

"The order books of Europe's chemical producers have not been looking so good, and confidence indicators have been going down," said Hubert Mandery, CEFIC's director general, at the general assembly.

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Dow Reshapes as Activist Shareholder Ups Pressure

Under increasing pressure from activist shareholder Daniel Loeb, manager of hedge fund Third Point, Dow within a few days announced it had widened the scope of its divestiture plans.

Andrew Liveris, CEO, Dow Chemical

Dow reduces its stake in two Kuwaiti joint ventures (c.f. page 3), plans to increase its dividend and expands a share buyback scheme and also has found a buyer for its Angus Chemical subsidiary – all moves CEO Andrew Liveris said were aimed at increasing value for shareholders. Almost as an aside, the largest US chemical group said it was expanding its petrochemicals and plastics activities in Argentina (c.f. page 7).

Evidently not pacified, Third Point subsequently announced it had hired Steve Miller, chairman of American International Group, and Ray Milchovich, former chairman and CEO of Foster Wheeler – two executives with "skills Dow desperately needs" – to an advisory board guiding the chemical company on how to improve shareholder value.

Shortly before press time of this issue, Dow Chemical and Third Point have settled their differences "out of court." The chemical group has now announced plans to add four new, independent directors to its board. Along with Third Point-proposed Milchovich and Miller, Dow has appointed Mark Loughridge and Richard Davis as directors following the 2015 shareholders' meeting scheduled for May. While 13 nominees will stand for election at the 2015 Annual Meeting, at least one will only serve out a year's term, as Dow has agreed to reduce the size of its board to 12 at the 2016 Meeting.

From the original target of $1.5-2 billion proposed last year, Dow now has its eye on shedding assets worth $7-8.5 billion by 2016, Liveris said in one of his recent announcements.

Along with the sale of Angus to private equity firm Golden Gate Capital for $1.215 billion, the new target would be achieved partly by reducing stakes in the two Kuwaiti holdings Equate and MEG Global. (dw) ■

Sanofi Board Fires CEO

An extensive string of differences over strategy and a reputation for authoritarian management style are said to have led to the forced resignation of Sanofi CEO Christopher Viehbacher on Oct. 29.

Serge Weinberg, chairman & interim CEO, Sanofi

The list of complaints allegedly included disagreements over the global direction the French company was taking, reflected in the Canadian-German citizen's decision to move his personal residence to Boston.

The consensus among observers appeared to be that the executive may have pushed too hard to cut Sanofi operations in France while expanding in the US.

Sanofi chairman Serge Weinberg said Viehbacher, Sanofi's first non-French CEO, who made waves in 2011 with the acquisition of US biotech and rare diseases specialist Genzyme for $20 billion, began looking for a buyer for an $8 billion portfolio of products without informing the board.

According to an internal company document leaked to a Sanofi union, which in turn distributed it to reporters, the sale would have allowed the drugmaker to reduce manufacturing operations in Europe.

"We are deeply committed to being an international company," Weinberg told analysts after the Viehbacher dismissal, adding that "there shouldn't be any misunderstanding about the issue of the French versus the rest of the world. Nationality won't be a criteria in the search for a new CEO."

Weinberg will serve as interim CEO of the French company until a successor to Viehbacher has been found. In the days leading to his dismissal, Viehbacher told the French press he had had word that the Sanofi board was already looking for a replacement for him.

Several pharmaceutical industry executives acknowledged having been contacted. (dw) ■

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Solvay Weighing Sale of Acetate Tow Producer

Solvay is said to be exploring the sale of its acetate tow business. Citing sources familiar with the matter, the news agency Bloomberg said the Belgian chemical producer has hired Goldman Sachs and Credit Suisse to advise on the sale of subsidiary Acetow, which produces tow for cigarette filters. Bloomberg said the sale of Acetow may be a prelude for further disposals at a later stage as CEO Jean-Pierre Clamadieu pursues a realignment of the company.

With 2013 sales of €658 million and EBITDA of €200 million, Acetow is regarded as a cash generator for Solvay and is seen as being on the radar of private-equity firms. Bloomberg's sources said they believed the business could fetch a multiple of seven times earnings making the business worth €1.4 billion. (dw) ■

Perrigo to Acquire Omega Pharma for €2.48 Billion

To expand its over-the-counter products portfolio, Irish consumer healthcare company Perrigo plans to acquire Belgium's Omega Pharma for €2.48 billion, excluding debt. Perrigo, which was de-listed by CEO Coucke and private equity firm Waterland in 2011, said it would also take on €1.1 million of debt from privately held Omega.

The Belgian company sells prescription-free medicines, healthcare products and personal care items such as wart treatments and suntan lotions. (dw) ■

Platform Specialty Chemicals to Launch IPO

With three major acquisitions under its belt this year, Miami, Florida-based Platform Specialty Chemicals has launched a $350 million initial public offering to cover its past purchases and fund further growth. The ipo, for which a share price has not yet been announced, will follow a $300 million offering in May of this year and a $651 million offering in October.

The Miami chemical firm's purchases during 2014 include three agrochemicals business, including Belgium's Agriphar for $300 million, Ireland-based Arysta Life Science for $3.5 billion and Chemtura AgroSolutions, a subsidiary of US chemical producer Chemtura for $1 billion. (dw) ■

DSM May Sell or Spin Off Underperforming Assets

Dutch food and chemicals group DSM may sell or spin off lower-performing units, CEO Feike Sijbesma said in presenting Q3 2014 results. Assets potentially up for grabs include composite resins and polymer intermediates, to which acrylonitrile and polyamide feedstock caprolactam belong. The businesses, with sales in the range of €1.5-2 billion, are too cyclical, Sijbesma said.

The company is under pressure from US activist investor Third Point – the hedge fund that is also pressuring Dow Chemical – to break up and focus on more profitable nutrition offerings.

DSM's shares have been volatile recently, partly as a result of speculation that peers such as Germany's Evonik might make a bid for the company. The German chemical producer has said, however, it is not in a hurry to make acquisitions.

While declining comment on the Evonik rumours, Sijbesma said DSM itself is not contemplating any major acquisitions, but rather focusing on improving operational performance. News agencies quoted sources as saying the company is in advanced talks with Ineos about a deal for caprolactam and acrylonitrile operations. (dw) ■

Clariant Divests its Energy Storage Business to Johnson Matthey

Clariant has agreed to divest its Business Line Energy Storage to Johnson Matthey. The total consideration of the sale amounts to $75 million at closing which is expected early 2015.

The Energy Storage business of Clariant is the largest hydrothermal Lithium Iron Phosphate (LFP) producer in the world. The lithium ion cathode material is used in electric vehicles and stationary battery applications. In 2013 the Energy Storage business generated around CHF 16 million in sales. The business employs around 100 employees predominantly in Canada and Germany.

„The divestment of the Energy Storage business with its LFP technology is part of our focused portfolio management and reallocating capital towards our core areas Care Chemicals, Catalysis and Energy, Natural Resources, and Plastics and Coatings," said Dr. Hariolf Kottmann, CEO of Clariant.

Robert MacLeod, Chief Executive of Johnson Matthey said: „This acquisition provides us with a strong position in LFP from which to develop a broad portfolio of battery materials. It further strengthens our battery technologies capability which marks an important step in Johnson Matthey's long term strategy to establish new business areas." (dw) ■

Clariant to Acquire Chinese Healthcare Packaging Firm

In a deal expected to be completed during the fourth quarter, Swiss specialty chemicals producer Clariant plans to acquire Hong Kong-based healthcare packaging manufacturer VitaPac. The privately owned company has sales of 4 million Swiss francs, 80 employees and a production site in Dongguan, China.

VitaPac develops and manufactures high-end protective packaging solutions for the pharmaceutical, neutraceutical and food industries as well as for the logistics and electronics sectors, mainly in Asia-Pacific.

Focusing on active sorbents, the Chinese company has a leading market position for desiccant packets for moisture adsorption. The acquisition is designed to complement the portfolio of Clariant's Medical Specialties business line within its Masterbatches business unit. The Swiss chemical producer said the buy will help it to gain increased market share in important emerging markets in Asia and other regions. (dw) ■

Brazil Rejects Solvay Sale of Indupa to Braskem

Brazil's competition authority CADE has decided not to allow the planned sale of its 70.59% majority stake in Solvay Indupa to Braskem under a deal proposed by Belgium's Solvay and the Brazilian petrochemicals giant.

CADE said the two companies are the market's chief competitors, and the deal as proposed would make Brazil's sole player the top PVC producer in the Americas.

Based at Buenos Aires, Argentina, Solvay Indupa is South America's second largest PVC producer and fourth-largest caustic soda producer. With capacity for pipe grade PVC resin at Santo Andre, Brazil, and Bahia Blanca, Argentina, the company can produce 540,000 t of PVC and 350,000 t of caustic soda annually.

The competition authority expressed dissatisfaction with the asset sale package presented in exchange for letting the $200 million deal stand, but said the companies could file a new proposal, preferably including the sale of only one Indupa plant. Braskem said the decision weakens Brazil's petrochemical industry, as the deal would allow it to capture efficiencies of scale and compete more effectively in international markets. This is especially important, it said, as the global PVC industry is seeing lower profitability and a "clear global trend" toward consolidation of assets. Solvay, which is in the process of divesting most of its PVC-related activities, said if the deal with Braskem falls through it would seek an alternative buyer. (dw) ■

Allergan Agrees to Be Bought by Actavis in $66 Billion Deal

A financially compelling transaction.

Brent Saunders, CEO and President, Actavis

After a seven month-long power struggle, US Botox manufacturer Allergan has agreed to be bought by Ireland-based drugmaker Actavis for $66 billion. This is more than $12 billion above the current value of a hostile bid launched last year by Canadian pharmaceutical producer Valeant in cooperation with activist investor Bill Ackman's Pershing Square Capital Management (PSCM). In their latest bid launched in early November, Valeant and Ackman, which together own nearly 10% stake of Allergan, had offered $53 billion.

The takeover of Allergan by Actavis would be the largest ever for the company and the third-largest health care deal in US history, according to Standard & Poor's Capital IQ. It also would be the largest acquisition in a year full of major M&A transactions. „This acquisition creates the fastest growing and most dynamic growth pharmaceutical company in global healthcare, making us one of the world's top 10 pharmaceutical companies," said Brent Saunders, CEO and President of Actavis. He added: „This is a financially compelling transaction."

The agreed price represents a premium of about 54% over Allergan's stock market value before Valeant and Pershing Square began their takeover effort and is more than double the company's share at this point in 2013. After the latest Actavis offer was announced, Valeant CEO J. Michael Pearson said his company's initial evaluation was that „Valeant cannot justify to its own shareholders paying a price of $219 or more per share."

Only three days after Actavis trumped its offer for the Botox maker, Valeant has cut its stake in Allergan to 0.1%. In a regulatory filing, PSCM informed Valeant that PS Fund 1 had sold all of its 2.2 million shares in Allergan allocated to Valeant USA.

The Actavis-Allergan merger would capitalize on a mammoth inversion coup achieved by Actavis in 2013. Based until then in the US state of New Jersey, an agreement to buy Irish drug maker Warner Chilcott allowed it to relocate its headquarters abroad to save tax.

The move touched off a wave of similar transactions or attempted transactions before the US Treasury Department in September of this year closed the loophole. However, as the Actavis deal had already been clinched, it remained unaffected.

With about $23 billion in revenue expected in 2015, the combined Actavis and Allergan would be one of the 10 largest global drugmakers. Cost savings could total $1.8 billion annually, the companies said. Allergan's blockbuster product, Botox will meet up with a suite of Actavis products in such fields as women's health and dermatology. (dw) ■

Lanxess CEO Confirms Plans for Substantial Job Cuts

A necessary measure to improve our competitiveness.

Matthias Zachert, CEO, Lanxess

Lanxess CEO Matthias Zachert has announced plans to slash 6% of the group's 16,700-member workforce up to 2016. Downsizing the workforce "is a necessary measure to improve our competitiveness," he said.

A redundancy package agreed with workers at German production sites includes severance payments, advisory services and support in finding new jobs. The headcount reduction of 1,000 positions is the first step of the three-phase Let's Lanxess Again realignment project initiated in May. It is aimed at restoring profitability, especially in the rubber segment, which constitutes the bulk of the German chemical producer's portfolio. Lanxess has leading positions in such high performance specialties as EPDM, S-SBR, Nd-PBR and butyl rubber, but its earnings have been hit by oversupply and low-cost competitors. Zachert said the realignment "lays the foundation" for the business to return to sustainable growth in the mid-term. The CEO forecasts total annual savings of €150 million up to the end of 2016 and savings of about €20 million during 2014.

The second phase of the scheme, begun in November, will be implemented mainly during 2015 and 2016. This will focus on optimizing sales and supply chains as well as production processes and facilities.

In the third realignment phase, also to be implemented in 2015 and 2016, the competitiveness of individual businesses will be examined. This phase will focus in particular on horizontal and vertical cooperation with other players in the rubber chain. (dw) ■

BASF Selling Textile Chemicals Business to Archroma

BASF is selling its textile chemicals business for an undisclosed sum to Archroma, a Reinach, Switzerland-based company owned by private equity investor SK Capital Partners.

Still to be approved by antitrust authorities, the transaction is set to close in the first quarter of 2015. It comprises, alongside BASF's global textile chemicals business, the assets of the German group's Karachi-based subsidiary BASF Pakistan.

The BASF business, which will be integrated into Archroma's Textile Chemicals Specialties Unit, employs 290 people, including 230 in Asia.

Selling the activities will sharpen the focus of the German group's Performance Chemicals division on growth-driven customer industries, BASF said. (dw) ■

Bayer Closes $14.2 Billion Buy of Merck & Co

Bayer has closed its $14.2 billion acquisition of US Merck & Co's $2.2 billion consumer care business following approval by anti-trust authorities in all markets except Mexico and South Korea. The combined Bayer-Merck business has pro forma sales of $7.4 billion million based on 2013 figures.

With the deal, the German group said it has become the leading producer of over-the-counter drugs in the Americas and has achieved "top global positions" in key OTC categories.

The integration of the Merck portfolio will make Bayer world's number two in non-prescription drugs, behind the combined business of Novartis and Glaxo SmithKline and ahead of the previous global leader Johnson & Johnson. (dw) ■

Ashland to Sell Elastomers Business to Lion Copolymer

Ashland said it has reached a "definitive agreement" to sell its Port Neches, Texas-based elastomers business to Lion Copolymer for an undisclosed sum. The deal is expected to close by the end of the year. Ashland acquired the elastomers activities, which primarily supply the North American replacement tire market, with its takeover of International Specialty Products in August 2011. The business accounted for around 17% of the Ashland Performance Materials segment's $1.6 billion in sales for fiscal 2014 (Jun. 30).

James O'Brien, CEO, Ashland

The decision to sell fits the Wilmington, Delaware-based company's "well-established strategy of divesting non-core assets and reinvesting in higher-margin, specialty chemical businesses where we see attractive growth opportunities," said CEO James J. O'Brien. "We are pleased with the value we received for the business and believe this transaction represents a good strategic fit for Lion," O'Brien added.

Jesse Zeringue, executive vice-president of Lion Copolymer Holdings, said the size of the facility in Port Neches, its access to feedstock and excellent storage capacity, combined with specialty products such as hot styrene-butadiene rubber polymers and high styrene polymers, provide his company with "an excellent growth opportunity." (dw) ■

Kuwait to Sell Dow's Petchem JV Shares to Public

Kuwait is mulling plans to offer the public shares in the joint ventures Dow Chemical is seeking to divest (c.f. Dow article on page 1), the Kuwaiti news agency KUNA has reported. KUNA said, Asaad al-Saad, CEO of the Kuwaiti government's Petrochemical Industries Co (PIC) had told a news conference that initial public offerings would be launched to sell the shares.

Consultants are to be hired to assess the size of Dow's assets in Kuwait, the executive is quoted as saying, adding that the US market's largest chemical player will remain a strategic partner of PIC. Dow's investments in the Middle East country include a stake in Equate, a joint venture with PIC and two other local partners, Boubyan Petrochemical Co and Qurain Petrochemical Industries Company, as well as in two of its subsidiaries and in MEG Global.

In the recent past, Kuwait's government is said to have shown renewed interest in offering shares in state-controlled assets to the public as a means of sharing the country's oil wealth with its citizens and impose market more discipline on companies.

In October, sovereign wealth fund Kuwait Investment Authority said it had would resume selling stakes in large enterprises to the public in the first half of 2015. KUNA noted that Dow's divestment plans were unrelated to a dispute with the US group over K-Dow, the failed plastics joint venture with PIC. Kuwaiti canceled plans for the jv abruptly in early 2009, shortly before it was to start business. Four years later, Dow received $2.2 billion in damages after an international arbitrator ruled in its favor. (dw) ■

Local Lead

Why Are Foreign Chemical Companies Growing More Slowly in China?

Several sources, both among our consulting clients and among industry experts, have remarked that recently, domestic chemical companies have been able to achieve faster sales growth than multinationals. Given the extremely high growth rate of domestic chemical companies reported by the China Petroleum and Chemical Industry Association (CPCIA) — an average annual growth of about 22% from 2009 to 2013 — this seems credible, but all industry participants do not accept the validity of this data.

Dr. Kai Pflug, CEO,
Management Consulting — Chemicals

A stronger indication comes from the Chinese Statistical Yearbook. According to this source, the share of output of foreign companies reached its peak in 2004 at 32.7% and afterward continuously declined, reaching 23.9% in 2012 (fig. 1). Unfortunately this data is not specific to the chemical industry.

A calculation shows that such a big shift in foreign company output share is equivalent to an approximately 6% lower annual growth rate in this period (2004-2012). Unfortunately, this data is not specific to the chemical industry. However, assuming that the 6% growth difference is also true in chemicals, this would still leave foreign companies with an annual growth rate of 16% in this period — a rate that is certainly high enough to make up for the loss of market share.

Overall, we feel there is enough evidence — both anecdotal and based on general industry data — that foreign chemical companies indeed show lower growth than domestic ones. The question then is what the reasons for the difference are. We will first present a few potential explanations, and subsequently discuss them one by one.

Hypotheses for the lower growth rate of foreign companies include

- Preference of Chinese customers for low-cost products
- Increasing capability of Chinese companies to produce higher-quality products
- Particular growth of segments dominated by domestic companies, e.g., construction
- Government preference for buying from local companies
- Better local knowledge of domestic companies, e.g., regarding market situation, ways of promoting sales, offering local products, etc.
- Greater flexibility of domestic companies
- Greater focus of foreign companies on profits compared with revenue focus of domestic companies (particularly state-owned entities, or SOEs)

Low-cost Preference

Indeed in many Chinese markets end consumers have a stronger preference for low-cost (and usually corresponding lower quality) products than in other markets. This applies to consumer goods such as shoes and consumer electronics as well as to cars and individual materials used in construction (e.g., water pipes, coatings, etc.), all of which include materials produced by the chemical industry. However, as a stand-alone explanation, this is insufficient to explain the slower growth of multinational chemical companies. Undoubtedly the same low-cost preference existed in China at the peak share of foreign-owned production in 2004 — if anything, it has probably weakened somewhat as consumers have become wealthier.

Improved Local Products

However, combined with a second phenomenon the rationale is much more sensible. China's chemical companies have on average substantially increased the quality level and the variety of their products. In some areas, such as isocyanates, the last 10 years have seen a shift from distinctly substandard materials to those that are highly competitive — witness the ascent of Wanhua. The rapid improvement of Chinese chemical materials has partly been enabled by former employees of foreign companies joining local firms and utilizing their experience. As expected, the gains in sales for domestic companies are most visible in relatively mature segments, where chemical substances have been fairly unchanged in the last 10 years. This gave domestic companies the time to catch up with the foreign competition.

Domestic Segments

In some chemical segments, multinational companies may have direct or indirect disadvantages because of government regulation and lack of access to local raw materials. For example, participation in the booming segment of coal conversion to chemicals requires access to China's coal at low prices, which is not given to foreign companies. In petrochemicals, foreign companies are restricted to joint ventures without majority ownership — it is possible that this also creates some disadvantages in those steps in the chemical value chain that are directly based on output of the petrochemical industry.

"Buy Locally" Policy

The Chinese government prefers local buyers over foreign companies. The stimulus programs of the government, which focus heavily on infrastructure investment, thus favor domestic producers of, e.g., steel coatings, construction chemicals and transportation equipment. This preference may even be stronger on the provincial level, with individual provincial governments preferring suppliers located in their own province.

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Better Local Knowledge

As foreign companies are still managed from outside of China, they do not have the same level of local market understanding as domestic chemical companies. For example, for German producers of chemicals it is still sometimes difficult to understand the local preference for lower prices over higher quality. As a consequence, chemical products produced by German companies tend to be somewhat overdesigned — the quality is higher than required by local customers. Of course, local companies also tend to have a better understanding of how to market their chemicals, how to deal with distributors, how to deal with local competitors, etc.

Greater Flexibility

Local chemical companies tend to be less rigid with regard to their products, their target markets, etc. For example, several Chinese urea producers responded to the existing overcapacity by moving toward fine chemicals. Other domestic chemical companies even engaged heavily in businesses outside of chemicals, in particular, in real estate and in finance. For foreign companies, both the limited local autonomy and the stronger belief in a long-term company strategy make such opportunistic shifts in business focus much less likely.

Focus on Sales Volume

In our experience, foreign companies focus strongly on profitability in their investments, for example, when investing in additional production capacity or in acquiring another company. In contrast, domestic companies — particularly state-owned entities — often seem to see sales increases as a goal in itself, even if not accompanied by additional profits. Management incentives in these companies emphasize the importance of stable employment and sales, not high profits — the low profit margins of many SOEs and the anecdotally reported surplus of staff in these companies are an indicator of this. Even for private domestic companies, profitability expectations tend to be much lower than for foreign companies.

In order to gain more insight, we also conducted a small poll among participants in the Chinese chemical industry (both Westerners and Chinese managers). They were asked to rank a number of possible factors, indicating which they assume to be the most important ones to explain the recent faster growth of domestic chemical companies. While the number of participants was small and no efforts were made to obtain a representative sample, the results (fig. 2) are nevertheless probably indicative of the current industry perception.

Conclusion

The improved quality of domestic chemical production and the acceptance of lower profit margins are the likely two most important reasons for the higher growth of domestic chemical companies. The expert poll confirmed this hypothesis. Surprisingly, though lower prices of domestic companies are certainly important, they are regarded as slightly less relevant than these first two factors. The same is true for those potential reasons, implying a better market understanding of domestic companies, such as more locally adapted products and marketing measures. Other explanations that have been suggested by some consultancies — such as the low participation of Western companies in the construction segment or the government preference to buy from local companies — are regarded to have limited relevance for the chemicals sector.

A few years ago, we wondered who would win the game for the Chinese mid-market. At present, it seems local players are ahead. However, the Chinese willingness to accept low margins may become a problem for local players as the market matures. In a mature market, firms will be judged much more by their margins than by their growth prospects. Thus the jury is still out on who will eventually benefit from the current developments.

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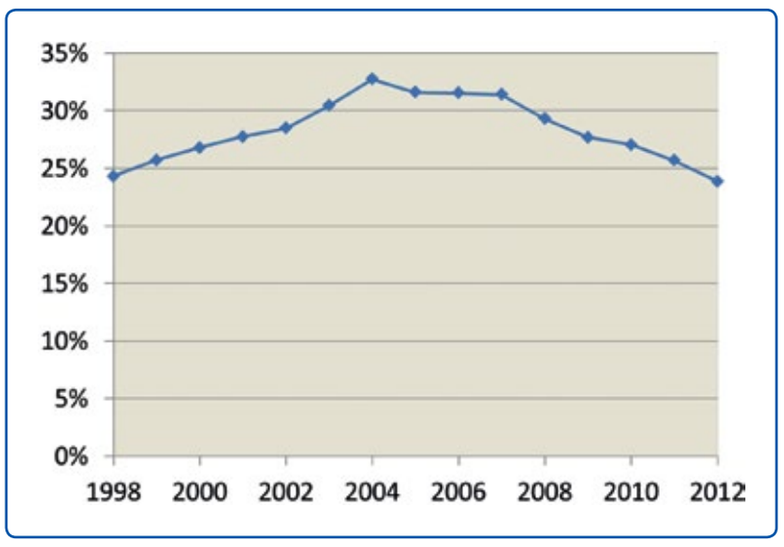

Fig. 1: Share of Chinese industrial output produced by foreign-owned companies.

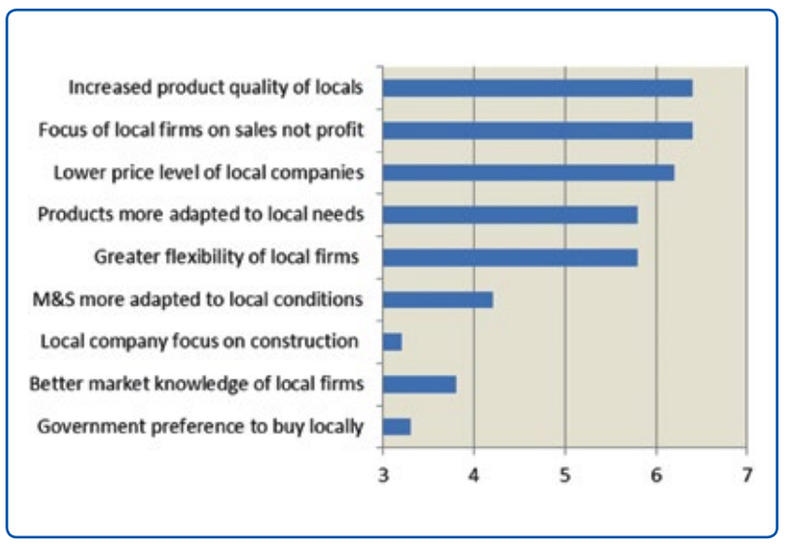

Fig. 2: Most important reasons for faster growth of domestic chemical companies
Note: high value indicates high importance. Results based on an expert poll.

CEPSA Chemical to Use Honeywell's UOP Technology

Shanghai-based CEPSA Chemical, a majority-owned subsidiary of Spain's Compañía Española de Petróleos (CEPSA), will use UOP's Phenol process technology in a new facility to produce high quality phenol and by-product acetone.

The new facility is going to be built at the Shanghai Chemical Industry Park and will have a capacity of 250,000 t/y of phenol and 150,000 t/y of acetone.

The new plant will make CEPSA the second-largest producer of phenol in the world.

Both, phenol and acetone are key building blocks for polycarbonate plastics used in domestic construction and automobile production. China is the world's largest consumer of polycarbonate, representing nearly 30% of global consumption. Demand is expected to grow by 13% annually during the next 10 years.

"With this plant, CEPSA will have a network of facilities away from its home country in order to meet demand where the growth is taking place," said Fernando Iturrieta, CEO of CEPSA Química.

"Despite recent, lower than expected growth figures, China will continue to be a growing market and CEPSA wants to be there. We are very proud of this project in Shanghai, as it is the first investment of CEPSA in Northern Asia," he added.

In addition to technology licensing, UOP will provide process design and start-up services for the Shanghai complex. The new phenol plant will be integrated with CEPSA Chemical's cumene plant, which is being built at the same site.

Commenting on the investment, Kai Pflug, CEO of Management Consulting – Chemicals, a consultancy based in Hong Kong, said: "Phenol is another Chinese chemical market in which past supply gaps have led to vast capacity announcements, putting the future profitability at risk. While 2013 consumption was about 1.55 million tons, a similar capacity will come into operation in the next 2 to 3 years, CEPSA´s being one part of it. The market grows quickly due to the shift to bisphenol A as major consumer instead of phenolic resins, still, the capacity may grow so fast that China may become a phenol exporter soon." (mr) ■

Air Products' LNG Technology Chosen for Chinese Plant

Air Products will supply its proprietary liquefied natural gas (LNG) process technology to French engineering firm Technip for a mid-scale project in Fengzhen City, China. The US gases producer said its single mixed refrigerant process technology will be key to a liquefaction train producing about 300,000 t/y of LNG for Fengzhen Wanjie Gas Co., which is due to start up in the second half of 2016. Air Products also will handle the engineering and manufacture of the heat exchanger equipment for the liquefaction section where the company's proprietary coil wound main cryogenic heat exchanger technology will be used. (dw) ■

Mitsubishi in Feedstock Deal with China's CNOOC

Mitsubishi Chemical has signed a feedstock supply agreement with Chinese state-owned oil company CNOOC to put its local production of purified terephthalic acid (PTA) on a more cost competitive footing.

In 2015, CNOOC plans to start up a refinery at Ningbo, China, from which it will supply more than 1 million t/y of para-xylene (PX) via pipeline to Mitsubishi's nearby PTA plant. Mitsubishi produces some 600,000 t/y of PTA in China to feed its production of polyester fibers and PET bottle resin, currently buying PX from a number of suppliers. In future it will make its bulk purchases solely from CNOOC.

With the implementation of the deal, Mitsubishi has said it may cut back PTA production in South Korea, from where it has been shipping to China. With the pipeline eliminating shipping costs, the chemical producer hopes to return the business to profit by 2016. Mitsubishi said it also may start exporting surplus PTA to other Asian countries. The Japanese company has annual sales of PTA total about $2.73 billion. (dw) ■

Hope Amid Economic Woes

Continued Page 1

"Output of specialty and consumer product chemicals has been relatively strong, but there has been a big drop in petrochemicals production — by around 6%-7%.

"Also the trade surplus in chemicals outside the EU has gone down by €1.9 billion during the first six months of the year," he said. "This is equivalent to around 10% of the total. If it continues on that scale for the rest of the year, it will be a remarkable decline."

The downturn in Germany is seen as a setback because of its position both in the European chemicals market and in the EU economy. "German officials have reduced expected GDP growth in Germany in 2014-15 to 1%, which is like no growth," Bock said at the conference. "If we're satisfied with 1%, we have big problems going forward."

Looking Up

Nonetheless, CEFIC is still sticking to predictions made earlier this year of a 1.5% increase in chemicals output in Europe in 2015.

"The two main positive factors next year are likely to be beneficial currency trends and political developments in Eastern Europe," Mandery said. "Relations between Russia and Ukraine seem to be going in the right way so that economic conditions there will get back to normal."

Also other factors that could lead to a further weakening of the global economy, such as the fall in oil prices and a slowdown in growth in the emerging economies, are seen as likely to be short-term phenomena.

"I'm not sure that these two trends of falling oil prices and softening emerging economies are

Europe is not going to save the world by itself.

Jean-Pierre Clamadieu, CEO of Solvay and new president of CEFIC

long-term," Clamadieu said. "At the moment they are short-term challenges. We can't adjust our long-term strategies on the basis of the latest economic reports."

Threat Of Shale

CEFIC is, however, taking seriously the effects of the US shale-gas boom, which CEFIC regards as a major threat to the competitiveness of the European chemical industry because of the way it is lowering energy and feedstock costs for US petrochemicals and other chemicals producers.

Even if Europe produced shale gas, its benefits would not be big enough to deal with the region's big difficulties with energy supplies.

"It would take a long time to have an impact," Clamadieu said. "The economic and geological conditions are different in Europe from those in the US It would not be a silver bullet. If the question is, will it solve the European energy situation, the answer is no."

Eye On Energy Policy

For CEFIC, one of its most important priorities is easing the burden of high energy costs in Europe. In particular, it wants to prevent EU climate change measures pushing up costs even further.

"Energy policy in the EU is a key issue for European competitiveness as is seen in the price differences, particularly in gas and electricity, compared with non-European competitors," Bock said. "If we continue in the present way with the decarbonization of Europe, the end result will be the further deindustrialization of Europe."

Europe needs to have a single energy policy rather than the current arrangement under which member states are allowed to pursue their own national energy strategies. Energy supplies also need to be more unified across Europe, according to CEFIC.

Much will depend on the outcome of a review of the ETS with its market for carbon emission allowances. The review, which will take place over the next few years to establish a new ETS for the next decade, should provide a means for alleviating the energy difficulties of industry through the official allocation of allowances.

"We believe that the ETS works because it can help achieve lower CO2 emissions at the lowest possible costs," Bock said. "It is an example

Energy policy in the EU is a key issue for European competitiveness.

Dr. Kurt Bock, CEO of BASF and previous president of CEFIC

of the liberation of market forces to achieve the best possible solution."

CEFIC hopes there will be a more coherent approach by the EU to the ETS as a result of the decision by the new European Commission President Jean-Claude Juncker to make energy and climate change the responsibility of a single commissioner rather than separate commissioners. "Energy and climate change are the two sides of the same coin," Clamadieu said. "Having one commissioner in charge of both is a positive step."

Image Of Innovation

The outcome of the ETS review could be influenced by the perception among both the EU public and its politicians of the strategic importance of the chemical industry to the European economy.

Its reputation has been boosted by the results of the opinion survey, which covered 8,000 of the "informed" and the general public in 12 EU countries and 350 policymakers, influencers and informed public in Brussels. Around 10% of the total were categorized as informed on the basis of their awareness of the industry and the issues confronting it.

Compared to a similar survey in 2012, the industry's reputation index scores have risen by around 5% across the EU, with the UK gaining the top marks of 66 out of 100, closely followed by Finland and Hungary.

"Amongst the general population, the benefits of the industry are seen as outweighing the risks," Graham van't Hoff, head of Shell Chemicals and a member of CEFIC's executive committee, told a press briefing. "Energy efficiency remains the industry's top reputation strength. It has been a key part of the industry's communications message over the last two years. Also the industry's innovation rates well in the EU and is a strong driver in Brussels."

The industry is seen as having an enabling role for its customer industries in terms of their product qualities, technologies and innovations. These include pharmaceuticals, biotechnology, medical devices, perfumes and cosmetics, nanotechnology, and the car industry.

The results of the survey give the European chemical industry a better reputation than its counterparts in North America and the Asia Pacific, according to APCO Insight, Brussels, which conducted the European survey and does similar studies in the other two regions.

The order books of Europe's chemical producers have not been looking so good.

Dr. Hubert Mandery, director general, CEFIC

"The European industry has a more positive image in particular as an enabler," said Bryan Dumont, APCO's Brussels-based president. "The role of being an enabler of innovation is becoming more important as a way of assessing an industry from a broader perspective."

Despite disadvantages such as high energy costs and weakening competitiveness, Europe's chemical industry is at least top of the world in terms of reputation among its own population.

Sean Milmo, freelance science and business journalist, Essex, United Kingdom

For latest CEFIC competitiveness data c.f. page 16.

Styrolution to Close PS Plant at Trelleborg, Sweden

Styrenics producer Styrolution – until mid-November a 50:50 joint venture of Ineos and BASF – plans to close its 80,000 t/y polystyrene plant at Trelleborg, Sweden, by the end of this year, with the loss of 51 jobs.

The Frankfurt, Germany-based company said the closure is designed to bolster the long-term economic sustainability of its polystyrene business in Europe, the Middle East and Africa (EMEA) and is expected to improve cost structure and boost capacity utilization at its facilities at Antwerp, Belgium and Wingles, France.

"The polystyrene market in Europe has been characterized by decreasing demand, overcapacity and underutilization," said Kevin McQuade, Styrolution's president for EMEA. However, he stressed that the company remains fully committed to its polystyrene business.

In a deal expected to close by the end of 2014, BASF is selling its share in the 50:50 styrenics joint venture to Ineos. (dw) ■

SKW Sells Swedish Calcium Carbide Plant to AlzChem

German specialty chemicals Group SKW Metallurgie has divested its Swedish plant for the production of calcium carbide effective November 19, 2014. The group sold 100% of the shares in SKW Metallurgy Sweden, which will be renamed as Nordic Carbide, to the AlzChem Group. Secrecy was agreed re the purchase price.

SKW Metallurgie is consistently implementing its strategic realignment (project "ReMaKe"), initiated by the new Executive Board under the leadership of CEO Dr. Kay Michel. In particular, the strategy of backward integration is no longer being fostered. "With AlzChem as a buyer we have passed our Swedish affiliate into competent hands. After this portfolio realignment, we will concentrate even more strongly on our profitable core business as well as reinforce our position in key markets", said CEO Kay Michel.

SKW Metallurgie produces chemical additives for hot metal desulphurization, and for cored wire and other products for secondary metallurgy. (mr) ■

Dow Closes Amines and Chelants Plant at Seal Sands

Dow Chemical has closed its last remaining production facility in the Teesside area of northeast England. Some 30 workers will be made redundant in the shuttering of the amines and chelants plant at Seal Sands.

Employees of the plant were told earlier this year that production was to be idled pending a strategic review, and later an employee consultation process was launched.

A spokesman for the US chemical group told local media that its chelants operations in Europe face challenging conditions, including the lack of a cost effective and reliable supply of an unspecified key raw material as well as regional overcapacity of liquid chelant products.

Dow said it is helping redundant workers to find new jobs with the help of the process industry cluster NEPIC.

Stan Higgins, CEO of NEPIC, said "Dow has ensured that there's been continuous professional development, which has made it easier for staff to migrate into other companies." (dw) ■

Germany Unveils Europe's Biggest Battery Plant

Germany has switched on Europe's largest commercial battery plant, powered by 25,600 lithium-ion batteries and designed to help stabilize the country's growing supply of renewable energy.

Built at a cost of €6 million, the facility is expected to help even out short-term fluctuations that sometimes accompany power from renewable sources and can cause damage or lead to power outages.

Germany is seeking to increase its share of renewable energy from about 25% percent currently to 40-45 % by 2025 and 55-60% by 2035.

Up to now, the lack of extensive storage capacity has been one of the biggest hurdles to the country's expansion into renewable energy, as power produced by wind and photovoltaic generally cannot be easily stored in any sizeable quantities.

Several German chemical companies, including BASF and Evonik, are working on projects to develop chemicals for the batteries of tomorrow. (dw) ■

Roles Under REACH

The Place in the Supply Chain Determines the Obligations

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PREVIEW

This is the first of a series of three articles from Dr. Kamptmann on the REACH legislation. Parts 2 and 3, respectively, will be published in the up-coming issues of CHEManager International.

Companies nowadays act globally. They might have several sites both within and outside the European economic area (EEA) and have substantial numbers of suppliers and customers, which also may have sites within or outside the EEA. Since December 2006, many manufacturers within the EEA have been obligated to comply with REACH regulation.

Dr. Susanne Kamptmann

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council is well-known as REACH regulation, or Registration, Evaluation, Authorization and Restriction of Chemicals. It requires all manufacturers within the European economic area — currently 28 EU member states plus Norway, Iceland and Liechtenstein — producing a substance in volumes of one ton or more per year to submit a registration to the European Chemicals Agency (ECHA) in Helsinki. In general the same applies to importers established in the EEA if they buy from manufacturers established outside the EEA, but there may also be exemptions from that obligation under special circumstances.

Each business relationship of a company requires that somebody within the supply chain take care of REACH registration obligations. In some cases the registrant has several options. The role of the registrant within a certain supply chain defines the role of further actors in that supply chain. Therefore it is important to know the roles under REACH and the obligations connected to each single role.

A short overview on important roles under REACH is given in figure 1.

Manufacturer Within the EEA

In REACH regulation Article 3(9) it is defined: "Manufacturer means any natural or legal person established within the Community who manufactures a substance within the Community." According to Article 3(8), "Manufacturing means production or extraction of substances in the natural state."

Manufacturer Outside of EEA

Each manufacturer producing outside of the EEA is a "Non-EU Manufacturer" (more precisely one would have to call it a "Non-EEA Manufacturer"). A Swiss company is on the European continent, but because Switzerland is not a member of the EEA this company will have the role of a Non-EU Manufacturer in regard to REACH. A Non-EU Manufacturer is not allowed to submit registration dossiers to ECHA on its own. However, if a Non-EU Manufacturer intends to offer already registered substances to its customers within the EEA as all EU Manufacturers do, it may involve an Only Representative.

Importer

Article 3 (11) of REACH defines: "Importer means any natural or legal person established within the Community who is responsible for import."

Only Representative

An Only Representative needs to be established within the EEA and operates on behalf of a Non-EU Manufacturer. The Only Representative acts formally as the Importer under REACH and fulfills the registration obligations. Customers of the Non-EU Manufacturer then will be Downstream Users.

Downstream User

Article 8 (13) of REACH defines the role of a Downstream User as follows: "A Downstream User is any natural or legal person established within the Community, other than the manufacturer or the importer, who uses a substance, either on its own or in a preparation, in the course of his industrial or professional activities." Distributors and consumers are not Downstream Users, whereas a re-importer is considered to be a Downstream User. That means whenever a company established within the EEA buys a substance or preparation from a European source, it will benefit from being a Downstream User since it does not have any registration obligation. In case of imports from Non-EEA sources, the company benefits from being a Downstream User only if the Non-EU Manufacturer fulfills the registration obligation via an Only Representative.

Trader Or Distributor

A Trader does not manufacture a substance itself, but purchases this substance from somebody else and sells either the whole volume as it is or after repacking it into smaller portions. In regard to REACH it makes a difference whether the Trader or Distributor is established within the EEA or outside. A Trader or Distributor located within the EEA may act as an Importer under REACH and therefore is allowed to be a registrant, whereas a competitor located outside the EEA is not allowed to submit a registration dossier to ECHA. Furthermore, a Trader or Distributor established outside the EEA is not allowed to appoint an Only Representative as Non-EU Manufacturers can.

Who Is Obligated to Register?

Fig. 2 shows that three roles under REACH may have an obligation or at least the opportunity to register. Each EU Manufacturer has registration obligations under REACH. An Importer has registration obligations only if he buys from a supplier outside the EEA that has not appointed an Only Representative. If a Non-EU Manufacturer takes care of the registration obligations by appointing an Only Representative, the former Importer becomes a Downstream User without any registration obligation.

Therefore companies established within the EEA must consider the situation in regard to REACH for any substance they intend to purchase from a supplier. Figure 3 shows the roles that, e.g., a German company may have when purchasing raw materials. If a raw material is purchased from a European source, the company will be unequivocally a Downstream User. If the company purchases from a Non-EU source it should ask whether the Non-EU Manufacturer has appointed an Only Representative. If the Non-EU Manufacturer has appointed an Only Representative, the German company benefits from being a Downstream User. If the company buys from a Non-EU source that does not take care of the registration obligations via an Only Representative (either Non-EU Manufacturer who has not appointed an Only Representative or a Non-EU Trader), the German company will be responsible for registration for volumes of one ton or more per year.

The German company also might consider doing its own registration for strategic reasons. If the German company has concerns about informing the supplier of its uses of a substance, which must be included in the registration dossier, it will have the chance to do the registration on its own when it buys from Non-EU sources. In this case, the German company will also have the possibility to buy from different Non-EU sources, whereas each registration dossier from an Only Representative covers exclusively the substance imported from the company that had appointed the Only Representative.

Dr. Susanne Kamptmann, Steinen, Germany

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Fig. 1: Important roles in regard to REACH

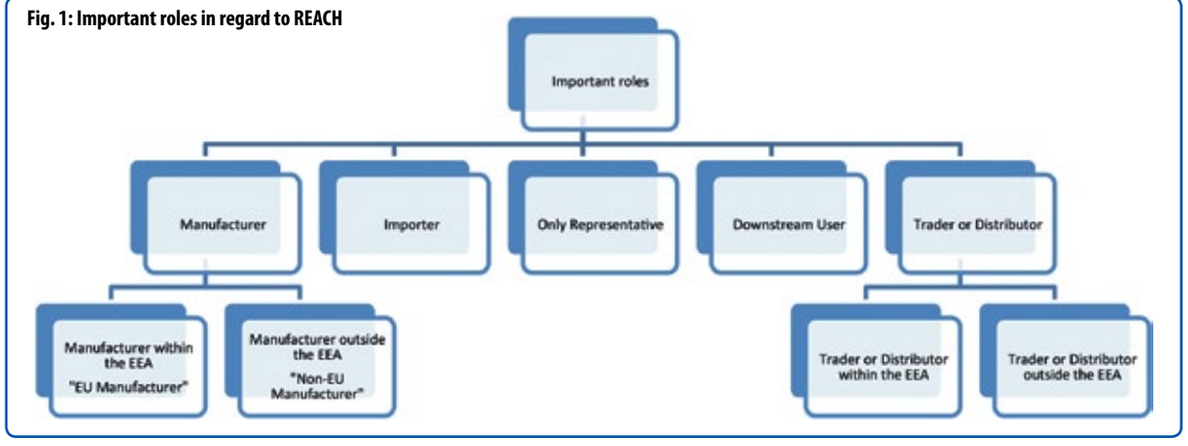
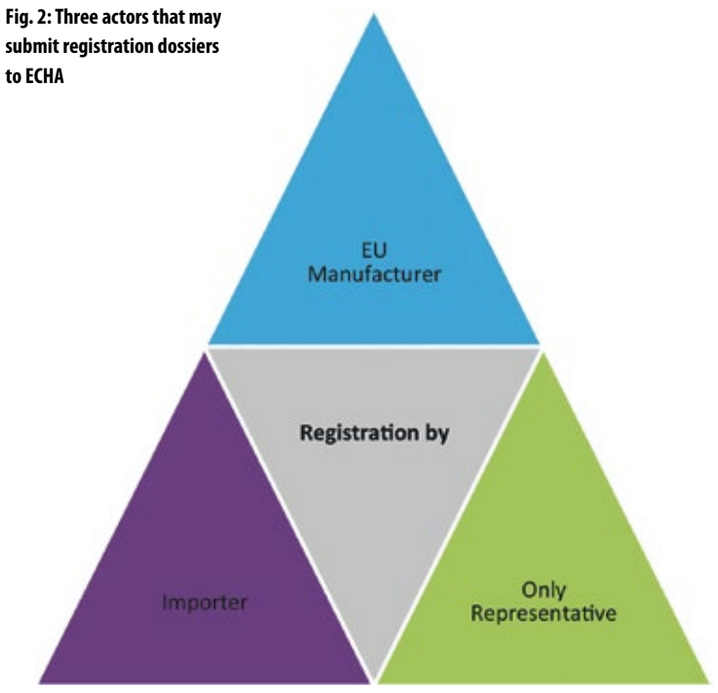


Fig. 2: Three actors that may submit registration dossiers to ECHA



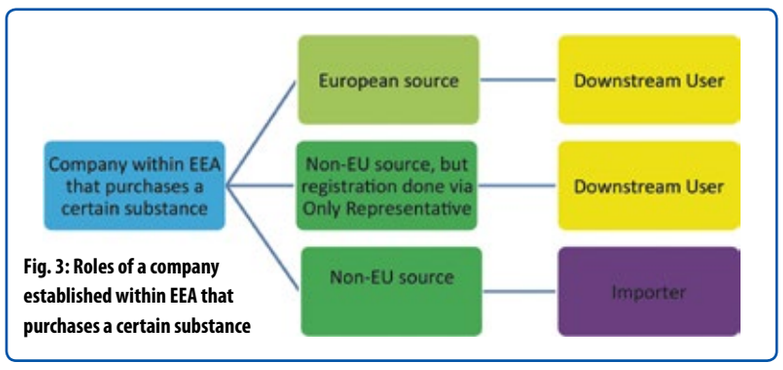


Fig. 3: Roles of a company established within EEA that purchases a certain substance

US EPA Says Neonic Seed Treatment No Benefit to Soy

An analysis by the US Environmental Protection Agency (EPA) has concluded that most neonicotinoid (neonic) insectides do not increase soybean yields compared to using no pest control at all."

The agency has been reviewing the crop protection agents with an eye toward their effects on bee populations.

EPA said it examined the effectiveness of seed treatment for pest control and estimated the impact on crop yields and quality as well as financial gains and losses.

The analysis is an important part of the science the US environmental watchdog will use to move forward with its periodic review of the risks and benefits of neonicotinoid pesticides to determine if they still meet safety standards.

In contrast to the EU, which has placed a two-year moratorium on the use of neonics on crops attractive to bees, the US has not yet officially taken any action. (dw) ■

European Parliament Backs GM Crops Flexibility

In a vote of 53 to 11 with two abstentions, the European Parliament's Environment Committee has voted in favor of allowing EU member states to restrict or ban cultivation of genetically modified (GM) crops on their own soil – even if the European Commission generally has not turned its back on manipulated crops.

The members of the European Parliament rejected an idea broached by the European Council to require the states to first negotiate with biotech companies to exclude their territory from GM crop cultivation zones, as this would have allowed biotech companies to pressure states that wanted GM bans.

According to the text approved in committee, member states will be able to pass legally binding acts restricting or prohibiting the cultivation of GM crops, including those approved at EU level. (dw) ■

Dow to Restrict GM Crop Sales Pending Chinese OK

Dow AgroSciences plans to restrict US sales of its new genetically modified corn and soybeans, Enlist – for which it sees potential sales of $1 billion – as it awaits import approval from China.

With the restriction, Dow hopes to avoid the market turmoil that hit the US grain industry when Syngenta commercialized its own GMO corn without waiting for China's thumbs up.

Over the past year, China has rejected more than 1 million tonnes of US corn that contained traces of the Syngenta corn Agrisure Viptera, and several US grain industry players have sued the Swiss group over the lost sales.

The National Grain & Feed Association has estimated that US farmers have lost more than $1 billion due to trade disruptions linked to the rejections. Dow has been waiting for approval of its new product for two years.

While awaiting China's approval, Dow will sell the corn only for livestock to be used on the farm and not sold. Soybeans will be offered to a small number of farmers as part of a non-commercial program to test the new seeds. (dw) ■

US Hopes for GMO Crop Cultivation in China Falter

DuPont Pioneer, agricultural seed and chemical unit of the US chemical group, is refusing to give up on efforts to cultivate genetically modified crops in Chinese fields, despite regulatory hurdles.

The company recently harvested its first test crops of GMO corn in China in six years after lengthy efforts to win government approval for the new field trials. However, it is pressing ahead while Monsanto is retreating, as it did earlier in the face of European consumer opposition.

China is already a large producer of genetically engineered cotton, but has not approved commercial cultivation for any type of biotech corn. Approval to sell GMO corn seed to Chinese farmers would mark a big victory for a US seed maker because China is the world's fastest-growing corn market.

Industry leaders have told the news agency Reuters they are focusing on winning Chinese clearance for imports of new genetically engineered crops rather than for cultivation approval.

Pioneer, which has established three joint ventures in China since 2002, was last allowed to conduct similar field trials on GMO corn there in 2008. (dw) ■

Sasol Starts Work on $8 Billion Louisiana Cracker

South African chemical producer Sasol is ready to begin construction on its planned 1.5 million t/y ethane cracker and derivatives complex set to start up at Lake Charles, Louisiana in 2018.

The $8.1 billion complex on the US Gulf Coast, which will "roughly triple" the company's US capacity, will house six chemical plants.

Sasol plans to produce around 900,000 t/y of polyethylene, split evenly between LDPE and LLDPE, along with 300,000 t/y of ethylene oxide and ethylene glycol. It also will produce about 300,000 t/y of specialty alcohols for detergents.

Fluor Technip Integrated, a joint venture of US contractor Fluor and the US offshoot of the French engineering firm, has the contract for primary engineering, procurement and construction management.

Sasol will also spend $800 million on infrastructure improvements and land acquisition. The project, one of the largest foreign direct investments in US history, is receiving incentive payments of $257 million from the state of Louisiana. (dw) ■

Dow Says US Plastics Plans for Americas on Track

Dow Chemical has announced plans to expand capacity and enhance production technologies and equipment of its polyethylene production units in Bahia Blanca, Argentina, to support increased demand from producers of consumer and industrial films.

From 2015, the US chemical giant said it will invest an undisclosed sum in its four polyethylene production units at the Argentine site, where its subsidiary PBB Polisor operates two light feed crackers, an LDPE plant and two plants for HDPE and LLDPE, including a swing unit.

The new investments will enable production of more high performance resins for flexible and rigid packaging applications to meet growing demand in Latin America, Dow said. The LDPE solution plant will be revamped to enable production of resins for extrusion coating used in high-value markets such as food packaging and hygiene.

Dow said the HDPE slurry plant expansion will help drive growth of bimodal blow molding resins, which are currently in short supply in the region. The HDPE gas phase plant, which produces resins for geomembranes and pipes, will also be upgraded to improve operational performance.

With the upgrades in Latin America and new projects on the US Gulf Coast, Dow is "well on its way" to realizing the full financial benefit of these efforts to connect cost-advantaged raw materials to many of its highest-margin downstream businesses, said James Fitterling, vice chairman, business operations.

In Freeport, Texas, the on-purpose propylene PDH project remains on track for start-up in mid-2015, and a new world-scale ethane-based ethylene cracker is on plan to start in the first half of 2017. Dow is also expanding its High Melt Index (HMI) polymer franchises in Freeport and its EPDM and LDPE facilities in Plaquemine, Louisiana. (dw) ■

Shell: US Shale Gas Project, South Africa Shale Gas Plans

In an updated property deal, Shell Chemical has exercised its option to buy Horsehead's zinc production site near Monaca, Pennsylvania, where it may build a major shale gas-fed petrochemical complex.

The land option deal was originally inked in 2012 and had been renewed on three separate occasions to allow Shell more time to evaluate the site, US reports said.

Although Shell said it has now determined that the Monaca site is suitable for the proposed complex, it said it had not made a final decision to go ahead with the project.

"The land purchase is a necessary step for Shell to advance the permitting process and allows us to proceed with some preliminary site development work," a spokesman said, adding that receipt of necessary permits and a full project evaluation will be required before a final investment decision can be reached. The Appalachian petrochemical complex, first proposed in 2011, would include an ethane cracker with an average ethylene output of about 1.5 million t/y, three polyethylene units with a combined production of 1.6 million t/y, and associated installations.

Feedstock for the proposed complex is expected to be supplied by Shell's recently reshuffled and newly discovered holdings in the Marcellus and Utica shale regions.

South Africa

Turning to South Africa, Shell has expressed concern about the slow progress the country is making in granting licenses for shale gas exploration, despite having accepted bids six years ago.

Shell is one of several firms seeking to explore the semi-desert Karoo region, near South Africa's border with Namibia, which is believed to have one of the largest untapped shale deposits worldwide.

South Africa lifted its 18-month moratorium on fracking to weigh environmental and economic implications in September 2012, but companies wanting to drill argue that nothing has happened since. Shell said earlier that, if allowed to drill, it would spend $200 million on the first exploration phase of six wells. (dw) ■

Peter Greven Buys Stephenson's Deinking Chemicals Part

Peter Greven, a producer of oleochemical additives with sites in Germany, the Netherlands and Malaysia, has acquired the paper de-inking chemicals business of Stephenson Group, with effect from Oct. 1, 2014.

For Peter Greven, whose core business is metallic soaps, ester lubricants and fatty acids, the paper industry is an important key market for oleochemical additives. With the takeover of the Stephenson business, the company said it will strengthen its market position and add the product line Serfax to its portfolio. Extensive synergy effects will be achieved, it added.

Both companies said they regard the deal as an important step for their respective futures. (dw) ■

Latin American Distributor GTM Sold to Advent International

The founding shareholders of Grupo Transmerquim (GTM), the second-largest chemical distributor in Latin America, have signed a definitive agreement to transfer control of GTM to private equity firm Advent International.

The transaction is expected to close in December 2014. Terms of the agreement were not disclosed. There are no changes expected to the GTM management team or to the company's existing operations as a result of this transaction.

Since its founding in Guatemala 31 years ago, GTM has grown organically to become one of only two chemical distribution companies with a fully Pan-American footprint. GTM provides chemical products and logistical services to more than 10,000 customers in a range of industries from personal care to oil exploration through its 40 locations in 12 countries from Mexico to Argentina and its supply offices in Houston and Beijing.

Richard Kellogg, President of GTM's Board of Directors, said, "There are tremendous growth opportunities for GTM in Latin America and beyond. Advent's resources, industry and M&A experience will facilitate both GTM's acquisition plan and its continuing organic growth."

Mauricio Salgar, Managing Director in Advent's Bogotá, Colombia, office, said, "The chemical distribution market remains highly fragmented, especially in Latin America, and GTM's size and geographic presence provide a strong platform to consolidate the industry."

According to Patrice Etlin, Managing Partner in Advent's São Paulo, Brazil, office, Advent recently started actively looking at the chemical industry in Latin America, and GTM is their first investment in the sector there. "In Brazil, we are evaluating opportunities not only in chemical distribution but in all segments of the industry," Etlin added. (mr) ■

Badlands NGL's New PE Plant to Be Built in North Dakota

The US shale gas boom is leading to construction of petrochemical and plastics production facilities in regions that have never before seen similar investment.

A new $4 billion polyethylene plant with capacity for 1.5m tons is planned to be built by gas producer Badlands NGL in the prairie state of North Dakota. Set to start up in 2019, output is earmarked for the regional market, but the company plans to market the plastic in other parts of the US and possibly also in Asia.

The state government is backing the project to create a captive use for the excess gas produced through exploitation of the Bakken shale formation. The liquefied gas now has to be flared off due to lack of a transportation vehicle.

Spanish engineering firm Técnicas Reunidas, which has the EPC contract, is putting final touches on an engineering analysis for the plant. The contractor also will handle the in-licensing of PE production technology.

A binding memorandum of understanding has been signed with distributor Vinmar Projects, which is also overseeing the project's financing. (dw) ■

DSM's New PA 6 Plant to Be Built in Augusta, Georgia

DSM Engineering Plastics has decided on Augusta, Georgia, USA, as the site of its new North American plant for polyamide 6 sold under the Akulon trademark.

The new facility manufacturing high viscous polymer for film grades used in flexible food packaging and other segments will be built next to DSM's existing facility that produces medium viscous grades of both Akulon and Novamid PA 6 polymers for a wide variety of components used in the E&E, automotive and consumer applications.

DSM said the decision to locate the plant, its first in North America for high viscosity grades, in Augusta demonstrates the „close working relationship" between the Dutch company and the state of Georgia.

Construction is now set start in the first quarter of 2015 with completion scheduled for mid-2016. (dw) ■

Growing Gains

How to Balance Intuition and Facts to Improve Commercial Excellence in Specialty Chemicals

Commercial excellence is a hot topic in the specialty chemicals industry. With investors focusing ever more on companies with a profitable growth strategy, businesses are becoming increasingly interested in ways to profitably step up organic growth.

Carolin Griese-Michels, Principal, Roland Berger Strategy Consultants

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The recent study "Commercial Excellence — How to Balance Intuition and Facts" addresses this topic and analyzes what makes companies focus on commercial excellence and how they go about it. Some 62% of the companies surveyed operate in the specialty chemicals industry, making this sector the clear focus of the study. To ensure comparability with other industries, only companies with innovative products and a multichannel distribution strategy were included in the study.

Key To Success

The findings of the study strongly emphasize the importance of commercial excellence. Of all respondents, 82% see commercial excellence as a way to increase organic growth, with 34% even viewing it as the main means of doing so. What is most surprising here is how great respondents across all industries expect the potential effects of commercial excellence on revenues and profits to be. Companies in Europe anticipate 7% to 9% higher revenues and 4% to 6% more profit. The majority of American study participants would even go so far as to put the possible revenue and profit uplift resulting from commercial excellence at more than 10%. Specialty chemicals companies tend to anticipate a more positive effect on revenues and profits than do other firms.

Methods And Means

When it comes to selecting the most important ways of improving commercial excellence, participants from all industries agree that adapting the product portfolio to customer needs, ensuring the focused deployment of sales resources for customers in target groups, and reinforcing selling skills are the most important aspects. Contrary to expectations, the majority of study participants do not think that the newly emergent topic of digital sales and marketing has any particular role to play in enhancing commercial excellence.

Asked to name the most important distribution channels, respondents said: people in technical sales, traveling sales reps and key account management, with people in technical sales believed to play a bigger role in the specialty chemicals industry than in others. Interestingly, these are the same distribution channels in which study participants perceive the greatest potential for improvement.

Focus on Key Account Management

In view of the great importance and the diversity of key account management as a distribution channel, it is particularly interesting to look at precisely how companies structure their key account management. It was especially noticeable here that the traditional methods still clearly predominate. Traditional methods of key account management include presenting one face to the customer, implementing master agreements with fixed pricing, and wining and dining customers to strengthen relationships. On the other hand, product solutions specially adapted to key account management, and cooperations in research and development and the distribution processes are also innovative methods. In the specialty chemicals industry in particular, there is an unmistakable trend toward more innovative solutions. Of respondents, 16% already cooperate with their customers on research and development, far more than in other specialized B2B industries (7%). American specialty chemicals companies apply innovative methods to a much greater extent than do European businesses.

> *Commercial excellence is the most important lever for organic growth in specialty chemicals and all other B2B industries.*

Significant Regional Differences

Given the range of different participants from around the globe, the study also facilitates an interesting regional comparison between North America, Europe and Asia. The regions differ significantly in what they believe to be the best means of improving commercial excellence. North American companies rely mainly on improving the key marketing and sales processes, European firms focus on strengthening selling skills, and Asian businesses regularly adapt their price-control mechanisms to their target customer group.

It bears mentioning that Asian and American firms have higher-than-average expectations regarding the potential of commercial excellence to increase revenues and profits. American businesses exhibit a clear trend toward using more innovative methods in key account management and in managing the distribution channels compared to the situation among the Europeans. Besides these differences in the methods employed, North American companies also view their value chain as much more advanced, in that, for them, considering and including direct decision makers and indirect influencers in purchases is all part of the regular procedure.

When it comes to the successful implementation of commercial excellence projects, it is crucial to have a single language of commercial excellence that everybody speaks regardless of their location. Analyzing tools, methods and processes cannot be the focus, because different regions all have a different understanding of them. The study demonstrates that sharing good practices and potential solutions should be the priority in centrally managed commercial excellence initiatives.

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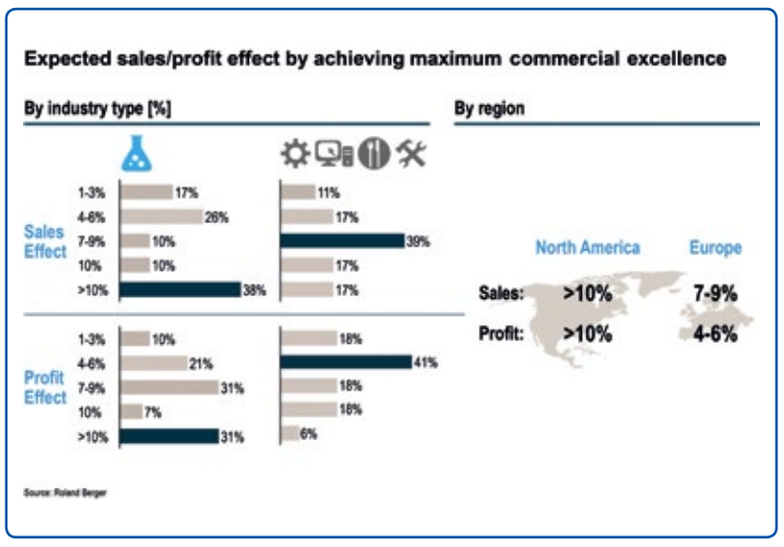

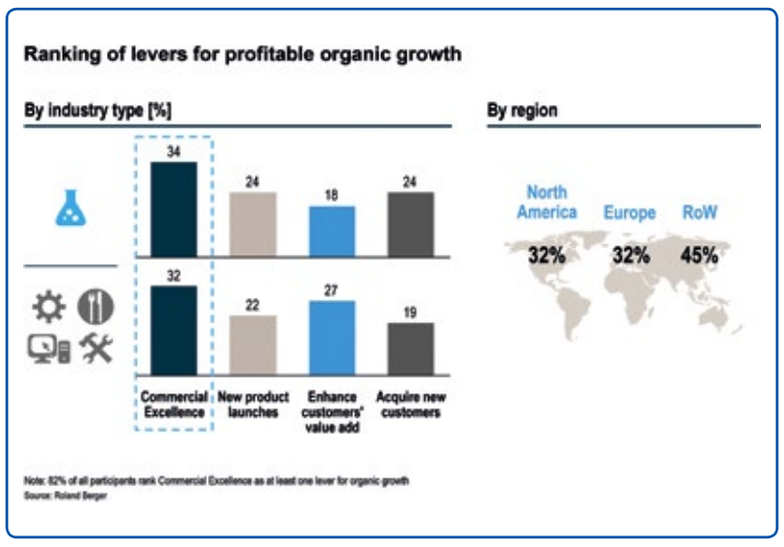

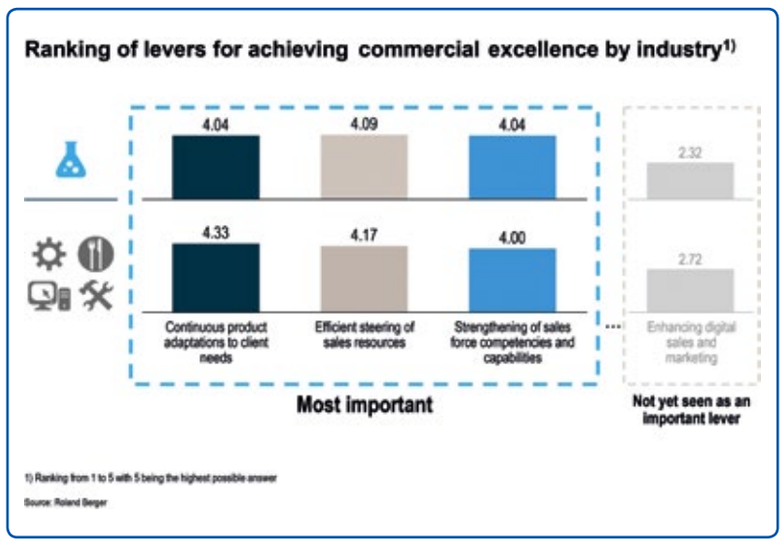

A Restructured Evonik May Seek a Major Acquisition

Evonik is on track to meet its earnings targets for 2014, despite weaker overall economic growth, CEO Dr. Klaus Engel said in presenting the company's third-quarter figures.

From July to September, Engel said the company had closed most of the earnings gap it was still showing in the first half year. Organic sales grew 1% to €3.2 billion, flanked by further volume growth and only slightly lower selling prices.

Starting in 2015, Evonik will have a new business structure. The company is converting itself into a management holding, and Engel hinted at the quarterly results presentation that it may be in the market for major acquisitions.

Listed on the Frankfurt stock exchange since 2013, Evonik is now in a position to finance deals by issuing new equity, the CEO suggested. Engel's remarks have fuelled speculation as to where management's interest may focus, with Dutch chemical producer DSM - along with Croda and Clariant - zooming in large. Unconfirmed reports said DSM's nutrition segment was at the center of the German company's attention.

Evonik's new holding will have three separate legal entities with limited liability. The new structure, Engel said, will allow the units "greater entrepreneurial freedom to allow differentiated management of their businesses."

From July 1, 2015 the Essen-based chemical producer's segments will begin operating on the market independently as Evonik Nutrition & Care, Evonik Resource Efficiency and Evonik Performance Materials. Supporting the standalone companies will be the site services unit Evonik Technology & Infrastructure and the strategic innovation unit Evonik Creavis. In preparation for the new legal set-up, new management boards will head up the operations from January 1, 2015. (dw) ■

Bayer CEO Sticks by IPO Plans for Plastics Division

Buoyed by a strong performance in its Healthcare and CropScience businesses in the third quarter, Bayer has raised its forecast for full year 2014.

In Q3, Bayer group sales rose 7% to €10.2 billion and EBITDA before special items by 1% to €41 million. All segments except MaterialScience (BMS), where the absence of one-off gains depressed figures, saw earnings gains.

Speaking to journalists during a conference call, CEO Dr. Marijn Dekkers insisted that despite the interest shown by private equity investors reported to be Advent, Carlyle, Cinven, CVC and KKR, Bayer is sticking by plans for a flotation of BMS by mid-2016 and not considering a sale of the business.

Although leaving open whether fresh acquisitions were on the agenda, particularly in consumer care, where he said more products mean better results, Dekkers suggested that Bayer might use proceeds from the sale of the plastics business to pay down debt.

In the run-up to year's end, the CEO said the group's confidence has been boosted by the "outstanding sales growth" of recently launched pharmaceutical products.

The Consumer Health division, into which the portfolio recently acquired from US-based Merck & Co for $14 billion has now been integrated, improved its sales "slightly," driven by the Consumer Care and Animal Health units.

Bayer's CropScience segment boomed in all regions, but negative currency translations ate into profit. To beef up its agriculture business, Bayer has agreed to purchase - for an undisclosed sum - certain land management assets owned by DuPont in the US, Canada, Mexico, Australia and New Zealand and a range of related products in Mexico and Latin America. (dw) ■

AkzoNobel to Sell its 50% Stake in Eka Synthomer JV

AkzoNobel has announced plans to sell its half of the non-consolidated 50:50 joint venture Eka Synthomer to its Germany-based partner, Synthomer.

Based in Finland, Eka Synthomer produces styrene-butadiene latex products for paper and board industry, mainly in the Nordic countries.

The sale completes AkzoNobel's exit from the paper chemicals market, said Niek Stapel, managing director of the Pulp and Performance Chemicals business. In July, the group agreed to sell its global paper chemicals business with 2013 sales of €243 million to Finnish chemical producer Kemira for €153 million. (dw) ■

Air Liquide Completes Acquisition of FordonsGas

French industrial gases producer Air Liquide has completed the acquisition of FordonsGas, a Swedish company that distributes compressed biogas (CBG).

With revenue of around €20 million, FordonsGas operates one of the largest distribution networks in Sweden for the alternative fuel.

Francois Darchis, member of Air Liquide's executive committee supervising innovation, said the acquisition of FordonsGas will allow the gases producer to be present across the biogas value chain, from production of biomethane to purification, liquefaction and distribution. (dw) ■

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Automation

Control is better: Process monitoring in chemical, pharmaceutical and food manufacturing

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Logistics

Critical bottleneck: study provides insights into complexity of transportation management

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Strategy

Demographic time bomb: a guide for process industry companies to talent sustainability

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From Experts for Experts

Dechema Praxisforums Support the Exchange and Networking of Specialists in the Process Industry

In the global marketplace, innovation and continuous development are essential for companies in the process industry. In particular, at the technological interface a great deal is being done, and it is becoming increasingly difficult to maintain an overview of the marketable innovations. Starting in 2015, Dechema (the Society for Chemical Engineering and Biotechnology based in Frankfurt, Germany) will offer a new event format with the "Praxisforums" (German for practice forums), aimed at supporting the networking of specialists who engage themselves with similar issues both across all industries and along the value chain. They are designed to differ considerably from the already established academic congresses, conferences and colloquia. CHEManager International asked Dr. Björn Mathes, head of Dechema Praxisforums, about the format.

Dr. Björn Mathes, Dechema

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What is the idea behind the new event format Praxisforums, and how do they differ from other academic congresses?

B. Mathes: The Praxisforums clearly appeal to industry representatives who are looking for concrete solutions, the latest trends and knowledge. The emphasis is on clear, focused information brokerage and discussion within the scope of expert presentations, best practice examples, an exposition and interactive discussion formats. Users from industrial production and suppliers of products, services and technology are able to communicate directly with each other. Purely academic congresses are more often concerned with questions that lie ahead of the specific application.

What topics will the first Praxisforum deal with?

B. Mathes: The first Praxisforum takes place from the 4th to 5th February 2015, with the topic "Enzymes for Industrial Applications." The topic plays an important role in many different groups within our broad network, e.g., in industrial biotechnology or the food sector. Further topics in the near future will be additive manufacturing/3-D printing in the field of apparatus and plant engineering, fire protection or database systems for the chemical and pharmaceutical industries.

Which groups are targets for the Praxisforums, and what added value or advantages are offered to participants?

B. Mathes: The Praxisforums appeal to representatives from industry and small and medium-sized enterprises who are looking for innovation for highly specific requirements of everyday practice. In the Praxisforums participants have the opportunity to exchange and network with colleagues from other companies and branches, with potential cooperation partners, and get to know the latest trends, innovations and practices. At the same time participants can present their needs and future requirements in direct exchange with suppliers of technology, services and products. As well as a forum for the networking of specialists who deal with similar issues both across all industries and along the value chain, the Praxisforums create a B2B platform on which leads can be generated efficiently.

How will the events be organized? What will the procedure be?

B. Mathes: As well as expert presentations, there will be best practice examples and tandem presentations that demonstrate the latest trends and future challenges, but also lessons learned from the past. However, the presentations are only a part of the new format. The exhibition and interactive discussion forums are integral components of the concept and not only "padding" in the coffee breaks.

The topic for the first Praxisforum in early February 2015 is "Enzymes for Industrial Applications," which rates among the core competencies of the Dechema. What is it concerned with?

B. Mathes: Enzymes have huge industrial relevance and ensure enormous added value. However, their potential is far from being completely exhausted. Enzyme technology is a platform technology that has the potential to make many processes more sustainable and more cost efficient. One can already describe them as small miracle substances. In the Praxisforum this potential will be outlined by way of expert presentations, discussion panels and the exposition. The addressed application sectors range from foodstuffs, nutritional supplements and animal feedstuffs to the pharmaceutical branch, textiles, leather, detergents, biorefineries, fine and special chemicals, as well as paper through to cosmetics. As well as new enzymes and practical examples for successful enzyme applications, the Praxisforum will also be concerned with the possibilities of enzyme utilization in other branches. Also, the production and design of enzymes as well as practices for the reduction of time-to-market are also in the focus.

With the Dechema community, you have a unique expert group for numerous topics in the area of chemical and biotechnical processes at your disposal. Which subject areas do you envisage for future Praxisforums?

B. Mathes: With more than 5,000 honorary delegates who are engaged in our panels as well as the numerous events and R&D projects that are conducted and overseen at the Dechema, we always have our finger on the pulse of our technical community. As a result, new thematic areas continually arise for which the Praxisforums are suitable meeting points for networking, presentations and information. For example, sensor technology or process analysis as well as automated formulation and continuous production in the pharmaceuticals branch are areas of great interest. However, communications topics such as crisis management or social media and efficient innovation management could also be picked up in the future. This is only a short list of possible topics for our new event format.

Where do you see the hot topics being?

B. Mathes: In particular, topics such as Industry 4.0 and complete automation will fundamentally change production plants, which we have known for some time. In the fine chemicals industry, this will happen earlier than in the commodities industry. However, the already mentioned 3-D printing has the potential to fundamentally change a few value chains. The shale gas boom and the associated investment decisions for large plants as well as the bioeconomy will also be further drivers of the industry. A recent topic for discussion is the use of excess electrical power in chemical processes. Some more developments in this area lie ahead.

In addition, the topic of water management, also in Germany with its ever-present water, will increasingly become an important focal point. Zero liquid discharge and low-emission production are topics which businesses in today's global competition have to become involved with. The worldwide process industry can profit greatly from German solutions. Finally, industrial water management is also one of the focal topics for the upcoming Achema.

Will you also take advantage of the Achema, the world forum and leading trade show for the process industries, for the implementation of the Praxisforums?

B. Mathes: Next year, the Achema will again be a trendsetter for the process industry as well as the bio- and environmental technologies. It is the communications platform for direct contact to suppliers and customers from our branch. Naturally, the momentum which originates from the Achema 2015 is also of great interest for future activities in the scope of the Dechema Praxisforums.

For the first time, the format of the Praxisforums will find its way into the Achema Congress. Here, market- and practice-relevant presentations in the vicinity of the respective exhibition groups will be presented. After the presentation, the audience can further discuss the topic personally at the exhibitor's stand, view the exhibits and discuss possibilities for prospective solutions. Through their presentations, this new format will make it easier for exhibitors to generate new leads.

Dechema

Dechema brings together experts from a wide range of disciplines, institutions and generations to stimulate scientific exchange in chemical engineering, process engineering and biotechnology. Dechema is globally known as the organizer of Achema. The world forum and leading trade show for the process industry will again take place 15 – 19 June 2015 in Frankfurt, Germany. www.achema.de/en

▶ www.dechema.com/praxisforum

Hi-Bis Doubles Specialty Bisphenols Output at Bitterfeld, Germany

Bitterfeld, Germany-based Hi-Bis, a joint venture of Japanese companies Honshu Chemical Industry (55%), Mitsui (35%) and Bayer MaterialScience (BMS, 10%), has doubled capacity for specialty bisphenols, a key component of the Apec polycarbonate copolymers, to 10,000 t/y.

The investment of around €50 million enhances the company's ability to meet strong global demand for Apec, a particularly temperature-resistant, high-performance plastic.

Hi-Bis started its first plant at the eastern German location in 2004. The current capacity expansion, the company said, was necessitated by "steadily rising market demand."

Rainer Rettig of BMS, head of sales for Europe and other regions, said Apec demand continues to grow well above the 5% average growth rate for the plastics market. BMS produces 9the plastic at Antwerp, Belgium. (dw)

BASF to Lift Tertiary Butylamine Output at Nanjing, China

In response to "notably increased demand" from Asia, especially China — according to Guido Voit, senior vice president, BASF Intermediates Asia Pacific — the German chemicals group is expan ding output capability of its world-scale production plant for tertiary Butylamine (tBA) at the Nanjing Chemical Industry Park in China by 2015.

Capacity is planned to rise by 60% to 16,000 t/y. The German group said the investment will "further strengthen" its leading position as a global supplier to the rubber and tire industry.

The primary aliphatic amine is used as an intermediate in production of accelerators for the rubber and tire industry as well as a building block for pharmaceuticals and agrochemicals block.

In addition to Nanjing, BASF produces tBA in Geismar, Louisiana, and at Antwerp, Belgium. (dw)

Momentive to Build Two New Formaldehyde Plants in Louisiana

Momentive Specialty Chemicals will build two new world-scale formaldehyde plants with total capacity for more than 400,000 t/y at its Geismar and Luling, Louisiana, production sites.

The Geismar plant, with a direct pipeline delivery system to the adjacent manufacturing sites of BASF and Huntsman, is expected to go on stream in the 4th quarter of 2015.

The Luling unit, due to start up in the first quarter of 2016, will supply agrochemicals giant Monsanto through a direct pipeline.

Momentive claims to be the world's largest producer of formaldehyde. The company said the expansion projects, which received tax incentives from Louisiana Economic Development (LED), will cost $66 million and support 68 jobs.

The additional capacity, which is complementary to Momentive's existing integrated network, will enable the company to meet expected growth in the Gulf Coast region. (dw)

Trust is Good, Control is Better

Process Monitoring in Chemical, Pharmaceutical and Food Manufacturing

Monitoring process performance is a critical requirement in any manufacturing process as producing quality products within specification reproducibly is a prerequisite of an economically viable process. Without effective monitoring and control strategy, as key requisite, a capable manufacturing process could not be successful.


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Monitoring is essential for various aspects of the control strategy – the quality of raw materials is usually tested on intake, process equipment often has to be rigorously qualified (e.g., in the highly regulated pharmaceutical or food industries), environment is controlled by implementing manufacturing-area classification where relevant, waste is treated prior to release and the quality of the final product is tested before release. Initiatives, such as quality by design (QbD) and a supporting enabling technology of process analytical technology (PAT) championed by the US Food and Drug Administration (FDA) in the pharmaceutical industry, aim to shift the focus for manufacturing from end-product quality testing to building the quality in the process.

Tightened Quality Control

Such a shift in emphasis would not be possible without reliable and effective monitoring. Indeed PAT has been defined as "a system for designing, analyzing, and controlling manufacturing through timely measurements (that is, during processing) of critical quality and performance attributes of raw and in-process materials and processes, with the goal of ensuring final product quality." Traditional process control strategies based upon information from laboratory assays and supervisory computer systems (SCADA) are routinely used to regulate process operation and correct for disturbances resulting from raw material variations through to production plant variations. If PAT can provide additional information on disturbances and deviations, giving greater plant insight, then the effects of disturbances can be reduced and quality control tightened. However, greater benefits are to be gained by the systematic use of PAT tools in process development to increase fundamental understanding and more robust definition of the design and control space of the process operation.

Food Safety

An analogy in the food industry in terms of the importance of effective monitoring procedures can be seen in the hazard analysis critical control point (HACCP) food safety standard, which is now widely incorporated into national food safety legislation of many countries. The seven basic principles of HACCP implementation consist of:

Conduct hazard analysis, considering all ingredients, processing steps, handling procedures, and other activities involved in a foodstuff's production

- Identify critical control points (CCPs)
- Define critical limits for ensuring the control of each CCP
- Establish monitoring procedures to determine if critical limits have been exceeded and define procedure(s) for maintaining control
- Define corrective actions to be taken if control is lost (i.e., monitoring indicates that critical limits have been exceeded)
- Establish effective documentation and record-keeping procedures for developed HACCP procedure
- Establish verification procedures for routinely assessing the effectiveness of the HACCP procedure, once implemented

Clearly effective monitoring is critical to ensuring product quality regardless of the type of manufacturing industry. Essential components of effective monitoring include representative measurement and a robust representation of the obtained information, allowing appropriate action to be taken.

Sensor Specification

A complete review of specific process instrumentation for critical parameter measurement is beyond the scope of this section, and the emphasis will be placed on the characteristics of measurements to be used in a critical parameter control scheme. These characteristics raise important questions that must be answered prior to sensor specification and they lead to the establishment of specific protocols that need to be followed during sensor use. Such characteristics would be equally applicable to established as well as emerging PAT measurement methodologies. The key considerations for a sensor are:

Accuracy and Resolution. A useful sensor provides measurement at an appropriate accuracy for the control task. If, for example, a temperature is to be controlled in the range of ±0.1°C then the measurement must be significantly more accurate than that. If that was not the case, the actual process may be subject to larger deviations, although it may appear that the process is controlled within this range.

Precision is the probability of obtaining the same value with repeated measurements on the same system and it is particularly important in the longer term operations. For instance, sensor drift from calibration can cause deterioration in system performance because the desired values are not achieved. Drift is often inevitable, so it is important to know the rates of likely drift so that recalibration can be performed as necessary.

Sensitivity is defined as the ratio between the sensor output change ΔS and the given change in the measured variable Δm (sensitivity S=ΔS/Δm). If the critical control parameter value changes, it is important that the sensor responds to such a change.

Reliability. Sensors provide information which is acted upon either by process operators in a "human in the loop" control scheme or directly by closed-loop control schemes. When operators use the information, there is some opportunity for human interpretation of the results. Failed sensors are more difficult to detect in a hardware-based closed-loop scheme. If the information is essential and a sensor fails, then implications on operation can be severe. Reliability is a function of the failure rate, of the failure type, ease of maintenance and repair, and physical robustness. Redundancy and planned maintenance programs to maintain the sensors are required to maintain reliability.

Response time is defined as the time required for a sensor output to change from its previous state to a final settled value within a tolerance band of the correct new value. The dynamic sensor characteristics are important as the sensor must respond significantly faster than the process. If a sensor has a long response time it may indicate an "average" value rather than the actual process value.

Practicality. The environment within a process may be particularly demanding — for instance, the sensors may be exposed to high temperatures or pressures. Whilst a sensor may in theory measure the variable of interest in ideal conditions, the range of the operational environment could render it incapable of functioning or may influence reliability.

Cost. Sophisticated instrumentation is now available for process monitoring with PAT, but the price can be high. However, the benefits gained can be significant if sensor information leads to raw material/resource savings or increases productivity. A cost benefit analysis should be performed to assess whether the instrumentation is appropriate.

A significant issue to be addressed in effective monitoring is the placement of a sensor as it influences the frequency of available measurements. Theory dictates that for a measurement to be of value it must be sampled above a certain minimum frequency. Often instruments are used on-line (say temperature or pH) or they can be multiplexed to save cost, but the frequency of information supply is limited because the instruments must serve several vessels (e.g., mass spectrometer measurements). However, it is off-line sample analysis where problems with low frequency measurement are most likely to arise.

Initiatives such as PAT lead to increased use of sophisticated sensor technology, such as near infrared spectroscopy (NIR), which requires more powerful data interpretation and monitoring tools.

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References are available upon request.

Read more about this topic in Ullmann's

This article is an excerpt from the Ullmann's Encyclopedia of Industrial Chemistry (wileyonlinelibrary.com/ref/ullmanns) which celebrates its 100th anniversary in 2014. More about the topic can be found in the encyclopedia article on Process Systems Engineering, 5. Process Dynamics, Control, Monitoring, and Identification. More concept articles on general interest topics in industrial chemistry and chemical engineering can be found on the Ullmann's Academy homepage (onlinelibrary.wiley.com/book/10.1002/14356007/homepage/ullmann_s_academy.htm).

HART Interface Solutions

HART Interface Solutions from Pepperl+Fuchs consist of two HART Multiplexer Systems for multiple signal loops and a HART Loop Converter for single loop applications. The Multiplexer is used to connect HART field devices to Asset Management Systems like AMS Suite: Intelligent Device Manager from Emerson Process Management.

At the heart of HART Interface Solution (HIS), the HART Multiplexer acts like a gateway device, routing communications between the maintenance workstation PC and the HART field devices. It interrogates each HART device, retrieves device information, and stores it in an internal database. This information is made available by the AMS Device Manager or PACTware. The HART Multiplexer also acts as a message coordinator for communication between the maintenance workstation PC and the HART devices.

For a single loop solution, the HART Loop Converter (HLC) allows access to all process variables provided by a field device and transfers them to conventional 4...20 mA loop. This enables it to make use of the hidden measurements done by many field devices and feed them to conventional DCS Systems.

Each HLC is able to power and communicate with one HART-field device. It sets the field device into burst mode and converts up to 4 HART-variables into analog output signals.

► www.pepperl-fuchs.com

Operational Excellence

In today's Life Sciences industry, operational excellence is running programs that increase plant availability and product quality while decreasing risk of product recalls. To achieve excellence, calibration processes have to be optimized. Hence, day-to-day calibration tasks have been outsourced to Endress+Hauser in a customer project, making sure that instruments are regularly and properly calibrated with regard to true time and cost efficiency. Benefits are, for instance:

- Shortened time to recalibrate device and proof of compliance as requested by Life Sciences industry regulations
- Improved interval of calibration according to the process criticality of the device
- Increased equipment availability thanks to on-site calibrations
- Conformity thanks to well-managed MPE (maximum permissible errors) and proactive deviation alerts

Documentation traceability of service events and calibration results in the customer's system was part of the project. Accessibility of the documents, timeliness of calibrations and transparency on quality issues ensured readiness for external and internal audits.

The installed base was assessed and calibration intervals were optimized. Endress+Hauser took responsibility in managing calibrations done by the subcontractors in cooperation with Endress+Hauser calibration technicians. All scheduled activities are now aligned with production, and calibration time per device was reduced. To maximize equipment availability, time needed for references calibration was shortened up to two weeks.

With agreed Key Performance Indicators and monthly reporting meetings, full transparency on calibration costs was achieved. Continuous identification of improvements, aiming to reduce calibration costs, enabled the customer to adhere to their calibration budget.

► www.endress.com

Emerson to Automate BP-Operated Operations in Azerbaijan

BP has awarded Emerson Process Management a contract in excess of $40 million to be the main automation contractor for the Shah Deniz Stage 2 development project in the Azerbaijan sector of the Caspian Sea. Emerson will provide integrated control and safety systems to help ensure safe and efficient control of gas production on two new offshore platforms and at an expanded onshore gas processing plant at the Sangachal terminal.

The contract is part of Emerson's global agreement with BP to provide services for greenfield automation projects. Selecting Emerson as the Main Automation Contractor helps BP simplify procurement and project execution. In this role, Emerson will provide system engineering, installation, configuration and testing, supported locally by the Emerson Azerbaijan service center in Baku.

Emerson is also providing automation technology and services for BP projects west of Shetland in the UK, including two offshore platforms in the Clair Ridge field and a floating production, storage, and offloading (FPSO) vessel for the Quad 204 development.

As part of the integrated front-end engineering and design team for Shah Deniz Stage 2, Emerson worked closely with BP and its engineering contractor to define the digital automation solution. The integrated Emerson solution will use Emerson's DeltaV distributed control system, DeltaV SIS process safety system, and AMS Suite predictive maintenance software.

The DeltaV system will control and monitor onshore, topside and subsea operations. The DeltaV SIS system will perform process and emergency shutdown functions, if needed, plus control the fire and gas detection systems to enable secure gas production. Electronic Marshalling with intrinsically safe CHARMs technology will help reduce the complexity of connecting the automation systems with thousands of control and measurement devices.

► www.emersonprocess.com

Process Analytical Chemistry: Everything Under Control

The terms „process analytical chemistry“ and „on-line monitoring“ are often used synonymously. They are gaining increasing attention and importance in both industry and academia. The extent of agreement between the two terms is indeed very broad in that they provide sufficiently accurate and immediate information on variables that describe the state of a chemical reaction.

On-line monitoring of reactions encompasses on-stream and on-reactor application of analytical methods to monitor the chemical composition of a reaction mixture, to identify process-related chemical species, and to quantify the concentration of reaction ingredients, products and byproducts. In addition to revealing the state of the reactor, on-line analysis of physical parameters (temperature, pressure, level, density, viscosity, etc.) may also reflect the extent of a chemical reaction.Process analytical chemistry comprises applications which supply relevant process information of interest „in-time“: The time for sampling and analysis is very short compared to the overall reaction time and thus allows adequate monitoring and efficient control of the reaction. The utilization of the analytical data for control strategies makes process analytical chemistry an essential integral part of process engineering and control systems.

Methods of Data Collection

Process analytical methods may be classified as off-line, at-line, on-line, or in-line with respect to sampling, sample transport, and analysis itself (table 1). There is no clear-cut line between the different classes, and the boundaries are even moving: some of today's off-line techniques may become tomorrow's on-line techniques. An increasing number of off-line techniques have been converted into on-line methods by automated, robot-assisted withdrawal of samples from the reactor or from bypass or process streams and feeding them into off-line instruments.

On-line monitoring and control of chemical reactions contributes to guaranteeing and improving product quality and consistency, increasing the efficiency of the process and ensuring safe reactor operation by monitoring process and reactor parameters, understanding the fundamentals of the reaction itself, and saving time for the analysis and sample transport. In addition, reductions of emissions by avoiding sample withdrawal and transport as well as of costs for labor, raw materials, off-spec products and process waste can be achieved.

Process Analyzer	Sampling	Sample Transport	Analysis
Off-line	Manual	To Remote Or Centralized Laboratory	Automated/Manual
At-line	Discontinuous/Manual	To Local Analytical Equipment	Automated/Manual Quick Check
On-line	Automated	Integrated	Automated
In-line	Integrated	No Transport	Automated
Non-invasive	No Contact	No Transport	Automated

Table 1: Classes of Process Analyzers

In most cases, purchasing and installation costs of on-line and in-line analytical instruments exceed those of off-line equipment, but as soon as the measurements required exceed a certain (relatively small) number per day, on-line analysis becomes superior to off-line analysis. However, the real savings of on-line reaction monitoring are due to improved process efficiency, lower raw materials consumption and waste generation, and, most important, the ability to manufacture high-quality products.

Application Design

Several issues have to be addressed when designing an on-line analysis application:

- Information necessary to monitor and control the process (physical parameters, chemical composition, etc.)
- Frequency of measurements with respect to the timescale of the reaction
- Average values, typical fluctuations, dynamic ranges and expected extremes of properties
- Type, precision, and response time of sensors
- Robustness of sensors and simplicity of installation
- Full automation and minimum maintenance of equipment
- Number (combination) of sensors and location of measurement
- Proper sampling and, if required, sample conditioning
- Form of data output and further handling of information
- Compatibility with process control system
- Safety precautions and possible hazards
- Costs of instrumentation and availability of trained personnel

Demands on performance characteristics of on-line analytical techniques differ for academic research applications, process development and pilot plant operation, and monitoring of industrial manufacturing processes.

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Additional information and references are available upon request.

Optimizing Silicone Production with Flow Technology

Delta Application Technics specializes in the design and manufacture of application machinery and dosing systems for silicone and other pasty, sludgy liquids. The Ophasselt, Belgium, company recently determined that by incorporating highly accurate Coriolis flow measurement technology into their silicone mixing and dosing machines, the overall efficiency of the silicone production process could be significantly improved.

Silicone, a versatile polymer with a wide variety of industrial and household uses, is expensive and challenging to produce. The manufacture of silicone involves extremely high-precision dosing and mixing of very viscous liquids. Operators often dedicate as much as two hours per day just to measuring, recording and adjusting these processes.

After much observation and testing, Delta Application Technics determined that the accuracy of their existing machines for silicone mixing and small-quantity dosing no longer suited the requirements of the customers purchasing these machines.

Jacques Coppens, the company's managing director, said, "Silicones are thixotropic, meaning that they are thick and viscous at rest, and can change state when kinetic energy is applied. The manual adaptation and weighting system used previously to control product quality resulted in shifts of up to 15%. Given the high cost of silicone, any offset turned out to be very expensive."

To improve the efficiency of the silicone production process and keep its customers satisfied, Delta Application Technics set out to build new machines that would guarantee constant supervision with less than 5% shift. The design called for incorporating high-accuracy Coriolis mass flow meters to automatically obtain measurements and record production values.

"The success of our projects depends on the availability and quality of the components used, so we compared the technical specifications of various mass flow meters from different suppliers to ensure that our flow measurement would be optimized," Coppens said.

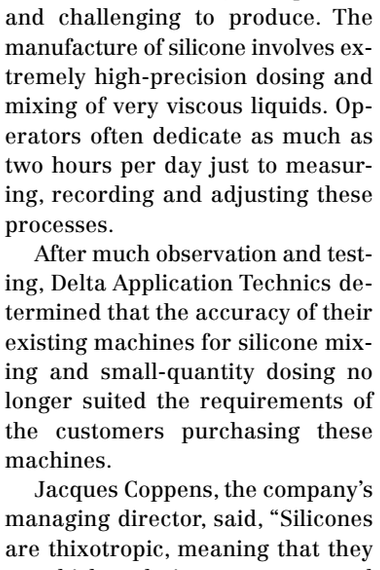
An Optimal Solution

Siemens was one of the instrumentation suppliers who volunteered to participate in this optimization project, and a representative suggested the Sitrans F C Mass 2100 Coriolis flow meter. The Research and Development department at Delta Application Technics carefully considered this meter along with several other options and concluded that the Siemens solution would be the ideal choice for this particular application.

The Mass 2100 offers the advantage of being equipped with a graduated tube — a single-piece curved tube free of any reducer, flow distributor or internal seams. Despite the high viscosity of the liquid being measured (approximately 40,000 mPa•s) and slow flow within the pipe, the device demonstrates only limited pressure loss because of its full-bore design and has a very high measurement accuracy of ≤0.1% of flow rate.

"The results are impressive," Coppens said. "Thanks to the Mass 2100 flow meter, with installation and fine-tuning by Delta Application Technics, measurement tolerance is now better than 1%."

At the same time, the new silicone machines are capable of determining the quantity of silicone for each ingredient injected, along with the pump velocity and the pressure, density and temperature of the silicones employed. This leads to optimum traceability in the production process.



Silicone dosing machine integrated with Sitrans F C Mass 2100 Coriolis flowmeters

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‘Transportation Is a Critical Bottleneck’

Study Provides Insights into the Complexity of Transportation Management

During the last decade especially, globalization has resulted in stretched supply chains and increased risk. Because of the inherent lack of control across the multiple external partners, time zones, and greater distances, supply-chain managers need to find new ways to master the steadily increasing complexity of their job. Therefore Camelot Management Consultants and Duale Hochschule Baden-Württemberg in Mannheim have conducted a study that provides insights into the complexity of transportation management.

Andreas Gmür, partner and head of Logistics Practice, Camelot Management Consultants

Joachim Getto, head of CC Logistics Excellence, Camelot Management Consultants

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The results show that many international companies today still lack a global harmonized transportation management strategy. CHEManager International asked Andreas Gmür, partner and head of Logistics Practice at Camelot Management Consultants, and Joachim Getto, head of CC Logistics Excellence at Camelot Management Consultants, about the significant and main results of this survey.

CHEManager International: You discovered in your survey a strategic gap between the actual and the required preparedness of chemical companies for future challenges. What is the reason and what are the consequences, especially for transportation management?

A. Gmür: This is correct. We had considered a number of recent studies, which had researched the chemical logistics trends. We have recognized that an increasing complexity in transport management can be observed for the future. Within our study, we then asked transport managers of chemical companies about their expectations on key trends for transportation management and their planned initiatives.

Comparing these results, it becomes apparent that many of the chemical companies are not sufficiently prepared for these future challenges — and many supply-chain or logistics responsibles know that. The risk for these companies will be not to be able to efficiently manage transportation in the increasingly complex environments or only with significant cost increases.

What are the most important trends in the chemical industry with the most impact on logistic activities — and why?

A. Gmür: We see four major trends in chemical logistics: increasing requirements on compliance, sustainability and customer expectations, as well as limited logistics capacities.

J. Getto: Transportation has become a critical bottleneck in the supply chain for many globally active companies in recent years. While the overall transportation volume has increased significantly as a result of ongoing globalization, the transportation modes are of particular importance for the chemical industry. Specifically, they are limited regarding their capacity in the short term. This is especially true for railway infrastructure, inland waterways and seaports. Limited availability of transportation slots and routes suggests there will be additional limitations on transportation planning.

There is a shift toward customized products even in the chemical industry. How does this affect the supply chains in the chemical industry?

J. Getto: Increasing customer expectations are mainly related to higher demand for product differentiation regarding physical product attributes as well as spatial and temporal availability. Important consequences for transportation management (TM) are, e.g., smaller shipments with a higher frequency and an increase in product variety, which requires greater coordination efforts. Both miniaturization of shipments and the growing variety of products increase the system’s complexity.

Why is it so important to master complexity in transportation management?

A. Gmür: Being able to master the increased complexity will ensure the competitiveness on the market, by being able to lower freight and process costs, to increase companywide transparency in your global distribution network and with this also being able to react faster to changing market conditions.

It is also a trend that chemical producers are moving their supply chain downstream. What are the reasons and is this observed worldwide? How can transportation management deal with it?

A. Gmür: That is right. Many chemical producers have been moving their supply chains downstream, either by acquiring producers of specific products or by performing additional activities themselves to have a higher share of value added.

This phenomenon has a variety of causes, e.g., internal growth, reduction of volatility, etc., whose relative significance differs across regions: Companies in the Middle East have proactively been seeking to invest more in downstream activities to add more pillars to their industry base and thus enlarge their business.

In contrast, downstreaming in Europe is mainly driven by events in North America: American companies are currently investing tens of billions of dollars within their established business models in the petrochemical and polymer industry, backed by the boom of fracking technology in North America. This puts some European players under pressure and forces them either to move to new industry segments or to find alternative commodity opportunities. Thus a key challenge is the resulting need to reassess their whole supply-chain organization and to tackle the rising complexity resulting from their additional activities.

What did you find out about the tendencies to outsource transportation management activities? Globally speaking, did you get the same results everywhere?

J. Getto: No, comparing the different regions, it is apparent that in North America the attitude towards transportation management outsourcing is by far the most positive, followed by the Europeans. More than 78% of the respondents in North America prefer to buy transportation management activities, whereas in South America more than 57% of the respondents prefer to “make.”

In general, this is not too surprising because a low degree of vertical integration has long correlated with the degree of development. For EMEA — Europe, Middle East and Africa — an ongoing trend towards expanding collaboration with external parties — and thereby transferring additional TM activities — may be observable. Some of the respondents explicitly noted that a conservative approach was a reason for a lower level of outsourcing — compared to North America — in combination with the large number of legal restrictions and regulations that had to be managed in their own organization and accounting.

Did you get an understanding in your survey of the key factors in the different regions of the world that might be useful to optimize transportation management?

J. Getto: We asked the participants about their expectations separating out different regions. Most respondents share the perception of an almost-saturated market in North America. The biggest overall growth is anticipated in the Asian/Pacific market, with Europe and South America in between.

More interesting is the anticipated increase of smaller shipments, mainly in Europe, complicating the respective logistics processes. The significantly higher number of stock-keeping units (SKU) in Europe due to the variety of languages and an ever-growing number of country-specific regulations must be recognized as a primary driver, making adaption to single markets necessary.

What major steps should be taken in general to get transportation management in shape?

A. Gmür: Our survey points out that companies’ current transportation management setup is not fully able to master the upcoming challenges of increased complexity, mainly due to inadequate TM harmonization and standardization.

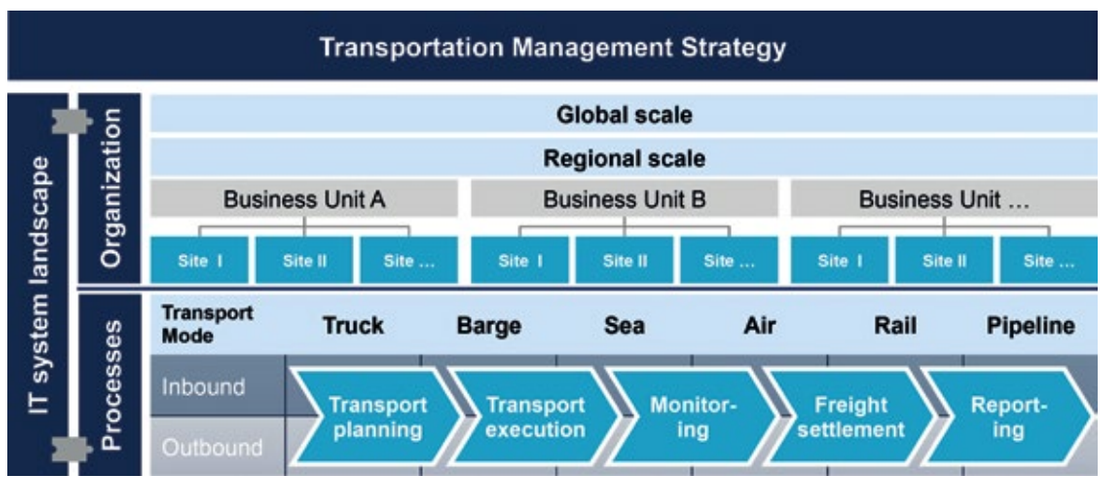
Our recommended approach derived from this study therefore consists of three parts:

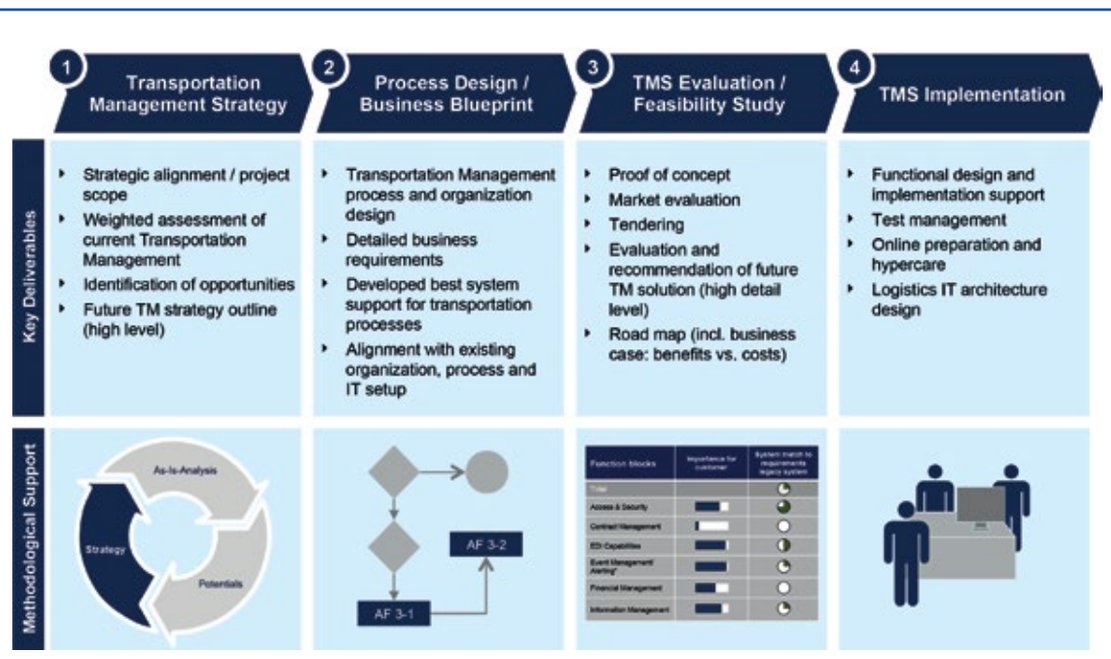
- Reconsider collaboration concepts in transportation management critically.
- Consider transportation management as a service to internal and external customers.
- Define corporate objectives to lead executives to the right targets.

How can chemical companies close the gap mentioned at the beginning?

J. Getto: The design and implementation of a global TM strategy will enable companies to master complexity and provide potential for improvement in the respective areas. The structure of the strategic blueprint needs to follow the three dimensions of organizational placement, process-oriented aspects and IT architecture.

A. Gmür: Our study has shown that over 80% of the participating companies are planning or already executing projects to harmonize their transportation-management system landscape. In our view it is paramount that these projects are going hand in hand with the mentioned strategic blueprint and are aligned with organizational and process aspects.





Additional Information

The study results were presented first on Oct. 13 at the meeting of the Rhein/Neckar chapter of Bundesvereinigung Logistik (BVL) at BASF in Ludwigshafen, Germany. Other presentations included “BASF’s Journey to Developing a Transport Management Process Strategy — A Case Study” and “Global Supply Chain Operational Design@BASF.”
Order a free copy of the study: http://www.camelot-mc.com/studien/

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Optimized Transports in Chemical Companies

Using Information to Meet Customers' Needs Efficiently

A lean transportation structure and an optimal allocation — in cost and service aspects — of logistics service providers enable companies to reduce their transportation and administration costs and to improve their transportation quality. Often, logistics planners ask themselves whether their transportation and storage structure, as well as their logistics service provider concept, matches the customer's needs. For chemical companies, it is particularly challenging to create an efficient transportation structure. In addition to customer needs, they must meet major requirements concerning storage and transportation. Thus, it is worth having a closer look at the transportation structure and the logistics service provider concept.

Gerlinde Kunzendorf,
Fraunhofer Center for Applied Research on Supply Chain Services SCS

Chemical companies often have no overview of their current cross-plant commodity flows, including customer transport volumes. Each plant has its own historical tradition of assignments of logistics service providers to customers. Consequently, a large number of service providers run similar or equal relations.

Companies often do not know whether

- warehouse locations are appropriate to customers' commodity flows,
- they use the right amount of logistics service providers to meet their business activities,
- the freight rate level of each logistics service provider is appropriate.

Many companies wish to stabilize the number and allocation of service providers concerning plant and customer locations.

The Fraunhofer Center for Applied Research on Supply Chain Services has developed a methodology to optimize cross-plant transports for chemical companies. Firms can determine possible savings and an allocation of logistics service providers that is optimal in cost and service aspects, using these four main levers:

- Optimizing warehouse locations
- Improving transportation routes
- Inspecting the freight rate level of each logistics service provider
- Reorganizing the assignment of the logistics service providers

Companies receive concrete recommendations on short- and middle-term measures, such as:

- Optimized warehouse locations and goods-to-warehouse allocations
- Bundling of certain transports used as a basis for tenders
- Identifying unnecessarily expensive point-to-point relations and service deficiencies
- Reviewing the number and selection of logistics service providers
- Examining the logistics service provider concept
- Introducing a development process for logistics service providers in order to improve transportation quality

Optimization in Four Steps

The optimization of transports starts with a collection and clearance of shipment data and the graphical representation of transport relations (fig. 1).

When optimizing warehouse locations, the best places for warehouses, considering cost- and region-specific location factors, will be determined. As products of the chemical industry in general are transported in full truckloads, it is important to find a geographically optimal goods-to-warehouse allocation in order to keep transportation distances to customers as low as possible.

When improving transportation routes, the company examines which transports can generally be bundled and which should be combined to reduce costs. Customers of the chemical industry are located in specific regions of Europe. The new routes can be the basis for new tenders.

When inspecting the freight rate level, the freight rates of each logistics service provider will be compared and set against the actual vehicle costs. Thus, the company learns about unnecessarily expensive point-to-point relations and service deficiencies. In general, freight rates for bulk transports are more expensive because of cleaning specifications. However, in particular, freight rates that are higher than the prices for dedicated round trips should be examined closely and, under certain circumstances, renegotiated (fig. 2).

When reorganizing the allocation of the logistics service providers, the company gets to know how many and the kind of logistics providers it really needs. This can mean changing the allocation of customers to logistics service providers or introducing a new regional forwarding concept. At the same time, introducing a development process for logistics service providers can improve the transportation quality.

This analysis by Fraunhofer SCS is proven for world-leading chemical companies in road freight transport of full truckloads, partial truckloads and bulk.

The graphical representation of transport relations creates transparency and a basis to reorganize the allocation of logistics service providers.

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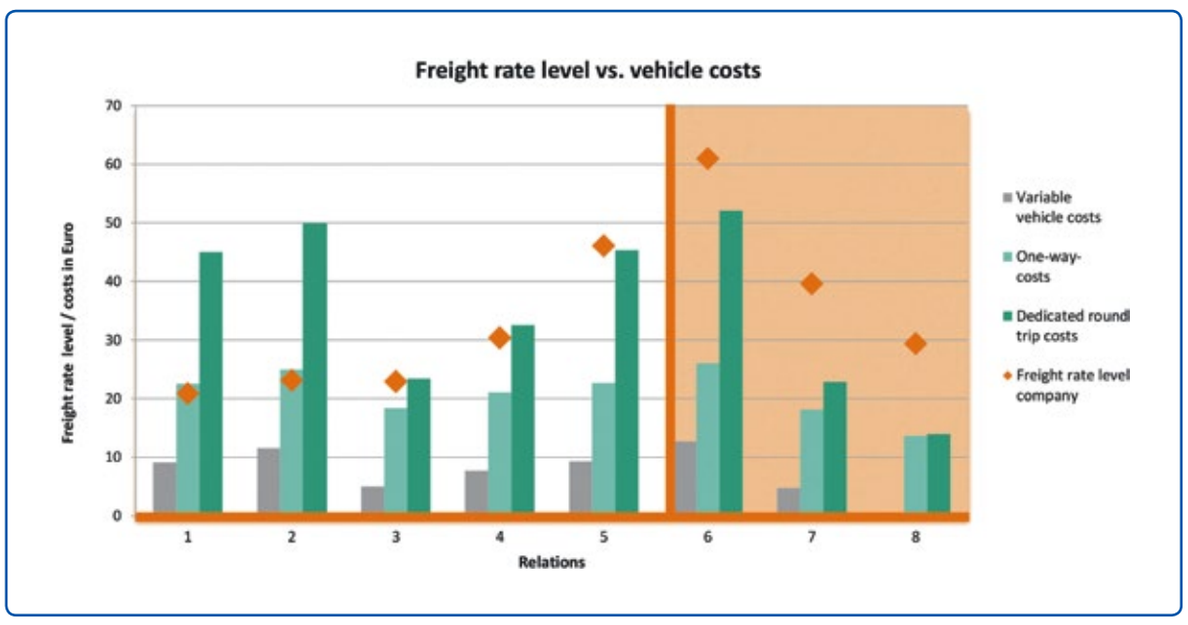

The freight rate level of each logistics service provider is assessed with different vehicle cost calculations.

TWS introduces Spill Trough in the USA

For companies that are transporting or storing liquid products, spill troughs offer clear cost benefit compared with permanently installed safety equipment either temporarily or in an emergency, according to TWS. The tank-rental company recently shipped a spill trough to the US for the first time and will be introducing it to interested customers.

The custom-made, stainless-steel mobile spill trough is designed for all common container sizes. It can be used in industrial settings for temporary storage as well as at transshipment terminals or production sites. Handling is easy if a few things are observed:

- The ground where the tank container and the spill trough are to be stored must be level, even and suitable for supporting the total weight of a fully loaded container and the spill trough.
- The necessary approvals of the authorities involved must be obtained.
- Corrosive liquids and dangerous goods can be stored if the approvals for the tank container and the spill trough are identical and conform to the quality of the stainless steel of both units.

Storage with the restriction of "explosion protection" is not allowed. The products have to be resistant to stainless steel according to the approvals. The specific gravity of any product carried is restricted to 1.2 per kg/m³.

Before starting, the spill trough must be clean and free of pollutants or rainwater. The tank container must be placed inside the spill trough in line with the front corner castings. The spill trough with the tank container inside must be checked every day for spillage or rainwater. In case the spill trough is filled with product or rainwater, the liquid can be pumped with the dip tube of the spill trough. The container may be heated according to some special requirements.

A chassis with 20-foot twist locks can transport the spill trough. A variable spreader can lift it. It is not permitted to move the spill trough with the 20-foot tank container on the road, as it does not have approval for transportation under Department of Transportation, International Maritime Dangerous Goods or European regulations.

Watch a video showing the handling of the spill trough: http://tws-gmbh.de/tank-containers-rental/?locale=en_GB.

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Mastering the Demographic Time Bomb

The Essential Guide for Process Industry Companies to Talent Sustainability

Organizations are reliant on their ability to embrace expertise and achieve competitive differentiation. However, the process industries are sitting on a 'demographic time bomb'. Veterans with comprehensive knowledge and vital skills either in engineering, project planning, scheduling, or operations management are soon to disappear from the workplace through retirement. So, what steps can companies take to mitigate skills shortages and help sustain their long-term future?

Paul Taylor, AspenTech

It is time for businesses to go back to basics and adopt the skills lifecycle methodology. This is an integrated system of T.A.L.E.N.T. (Training, Academia, Legacy, Evaluation, Networking, Tools), whereby companies can implement best practice to mitigate the loss of important skills and ensure the talent pipeline remains robust for the long-term. While some organizations are good at certain aspects of human resourcing, there is still disconnection between all the vital areas of the business. This is not a linear process — it is an ongoing dynamic practice that helps improve operational efficiencies and maximize profitability.

Training

In order to address the skills shortage, several companies are taking greater measures to conduct their own in-house training and graduate programs. For example, MOL PIMS Academy makes it possible for young graduates to quickly acquire the key technical competences and practical experience necessary to become effective supply chain professionals in the petroleum industry.

The cost of training new or existing engineering talent is often a point of contention. On the one hand, this requires time and investment, which comes with high employer expectations for immediate business returns. On the other hand, the loss of expertise due to the inability to develop skills has far wider implications. Companies need to keep pace with new techniques, product upgrades to systems and demonstrate market understanding in order to meet customer expectations. Training is a crucial part of nurturing and retaining talent. This needs to be an on-going process — if you don't train, there's no gain.

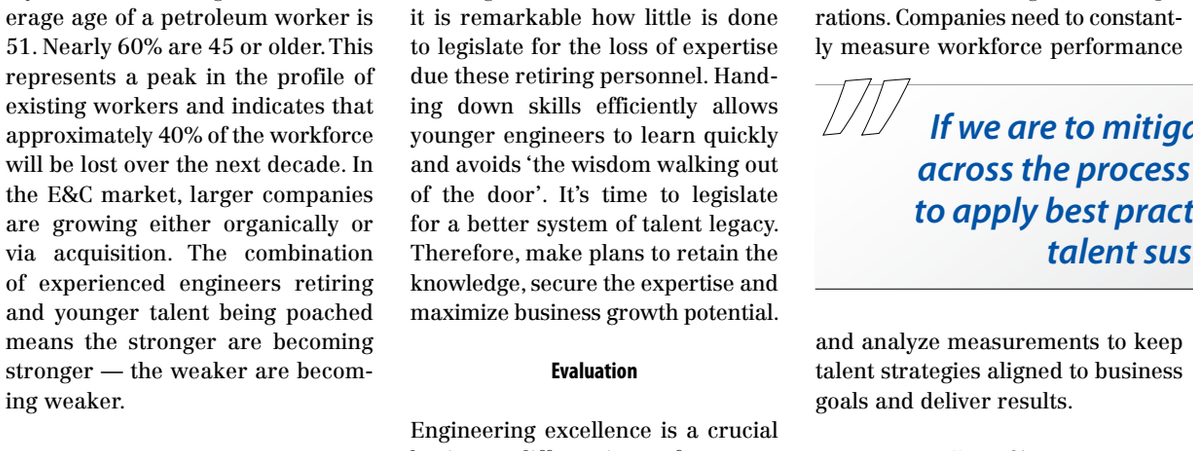
Academia

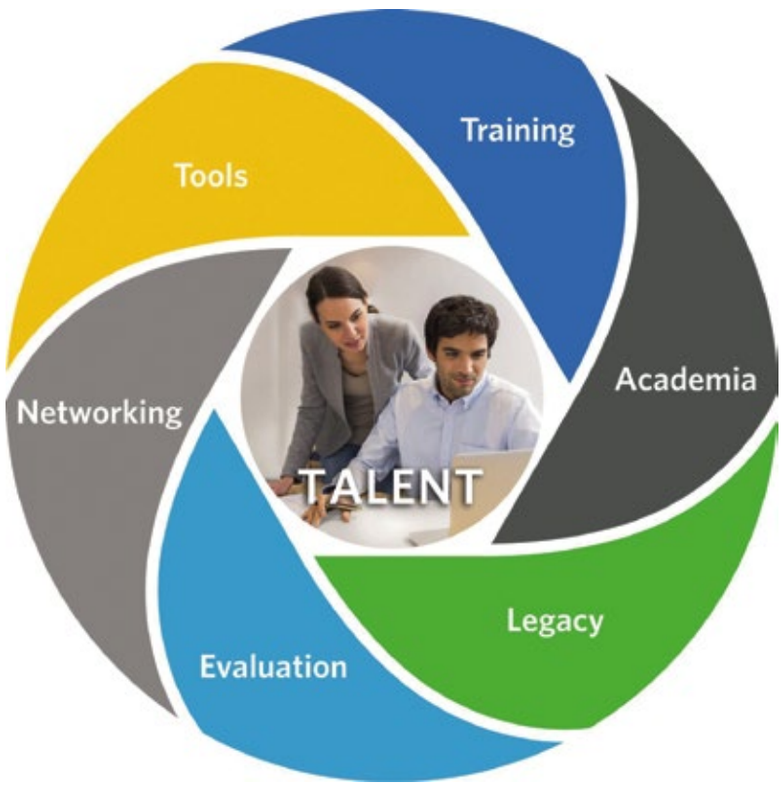
Developing close links between industry and academia is a vital pipeline to 'turning on the talent tap'. Many companies have successfully sponsored graduate programs or initiatives to encourage engineering talent. For example, Total created its own university in 2005 followed by an education department in 2010. In the United Arab Emirates, where it is a requirement to employ 75% local nationals by 2014, the company created the Total Academy and the first group of students graduated in 2012. AspenTech, a provider of optimization software, recently established the AspenTech Academy, a corporate advisory group of world-renowned university professors.

Helping university professors educate students to better understand engineering technology and gain insights to overall operational challenges and market trends will make the transition from academia to industry much easier for graduates. If companies take the lead to work with academia more closely then the next generation of engineers will be prepared for key roles and have a head-start when entering the workplace.

Legacy

A crucial strategy for process industry companies is to establish effective ways of capturing and retaining knowledge with the ability to pass it on to the next generation. According to international trade body the Society of Petroleum Engineers, the average age of a petroleum worker is 51. Nearly 60% are 45 or older. This represents a peak in the profile of existing workers and indicates that approximately 40% of the workforce will be lost over the next decade. In the E&C market, larger companies are growing either organically or via acquisition. The combination of experienced engineers retiring and younger talent being poached means the stronger are becoming stronger — the weaker are becoming weaker.





Employers continually drive organizational performance to deliver high return on investment, but it is remarkable how little is done to legislate for the loss of expertise due these retiring personnel. Handing down skills efficiently allows younger engineers to learn quickly and avoids 'the wisdom walking out of the door'. It's time to legislate for a better system of talent legacy. Therefore, make plans to retain the knowledge, secure the expertise and maximize business growth potential.

Evaluation

Engineering excellence is a crucial business differentiator for many small to medium sized companies. Large operators are under enormous pressure today to meet tighter project timetables. However, the process of evaluating staff performance and setting clear goals is often an under estimated discipline. Sometimes the practice of establishing clearly defining targets and reviewing career goals can be conducted with little attention in a highly pressured, time constrained environment. Evaluation is a two-way process. It is an opportunity for the employer to assess performance and acknowledge added-value achievements and for the employee to express viewpoints and benchmark their skills against the industry standards to identify areas for improvement. Evaluation also builds loyalty. Implementing comprehensive programs across the main areas of the business and assigning key business performance indicators helps to assess results. Through transparent metrics and realistic goal setting, both employers and employees can set clear expectations to best manage career aspirations. Companies need to constantly measure workforce performance and analyze measurements to keep talent strategies aligned to business goals and deliver results.

> *If we are to mitigate a skills shortfall across the process industries, we need to apply best practice to the process of talent sustainability.*

Networking

Many companies succeed in business by building strong networks with industry leaders and professional institutions. Greater interaction brings greater benefits. Both individuals and employers will gain at all career stages. Ultimately, it is the proactive engagement of companies with eminent leaders, government and industry bodies that will help to nurture and reward chemical engineers across oil and gas, chemicals, manufacturing, engineering, construction and much more. Industry bodies, such as IChemE for example, build and sustain an active international professional community, united by a commitment to qualifications and standards that foster engineering excellence.

Tools

Investment in technology is a strategic basis for harnessing talent and building expertise in key disciplines. Essentially, providing staff with the appropriate tools will enable individuals to demonstrate their skills and efficiently meet the tasks aligned to the company goals.

Today's generation of engineers embrace technology having witnessed a world where the use of software, mobile devices and cloud-based solutions are prevalent in all aspects of life. The use of intuitive optimization software, for example, helps to improve decision-making and provides younger engineers with easy-to-use functionality including, state-of-the art visual analysis and powerful process design to reduce energy usage, minimize capital operating costs and improve product yield.

Conclusion

There is a clear need for a sustained approach to capturing, nurturing and retaining knowledge for the long-term future of the process industries. T.A.L.E.N.T. is a model that is scalable and can be used as a guide to address skills issues that exist in the industry today. This is not a linear journey — it is an ongoing dynamic process that helps improve operational efficiencies and maximize profitability.

If we are to mitigate a skills shortfall across the process industries, then we need to apply best practice to the process of talent sustainability — from developing skills that will model our plants, through to operational management of highly technical and complex projects. The next generation of talented engineers will build our communities, develop infrastructure, design and construct new roads, inspire creativity in chemicals and manage our manufacturing industries.

Executing an integrated T.A.L.E.N.T. model and aligning it with the overall business strategy will allow process industry businesses to reap the rewards of enhanced loyalty and productivity, establishing a clear vision for transforming the way companies optimize their biggest asset — people.

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Songwon Diversifies into Indian and Middle East Plastics Markets

On August 1, 2014, Songwon's acquisition of the specialty chemicals business of Indian company SeQuent Scientific, which includes the polymer stabilizer business, the production site in Panoli, India, and the local R&D division, has been successfully completed.

Maurizio Butti, COO, Songwon

Jongho Park, CEO, Songwon

The acquisition places Songwon in a stronger position to better meet the needs of their current and future customers in India. In addition, a manufacturing plant in Abu Dhabi will be completed in Q1 2015, according to Maurizio Butti, Chief Operating Officer of the South Korean specialty chemicals company.

"Currently, the consumption of plastic products in both India and the Middle East is less than half the level of more developed countries, which also suggests that the two markets have strong growth potential. We will, therefore, proactively target emerging markets to secure a new growth engine and diversify our markets to build a business structure that supports stability in our business results," says Butti.

Penetrating Emerging Markets

Butti notes the high growth potential of both India and the Middle East. "Since Songwon's flagship product is plastic antioxidants, the demand for plastic products heavily influences the company's overall performance," Butti explained. "Around the world, the market for plastic materials such as polyethylene is growing by just 4 to 5% a year on average, but the same market is growing almost twice as fast in emerging economies including India and the countries in the Middle East."

Songwon is currently working on establishing a manufacturing plant for One-Pack-Systems (OPS) in the Khalifa Industrial Zone Abu Dhabi, UAE, in collaboration with a local firm, Polysis Industries. OPS products combine several additives as requested by customers to create a polymer which forms a basis for synthetic resins. Butti believes that the hot climate in the Middle East may contribute to the higher demand for OPS in this region.

In terms of Songwon's global sales, Korea takes up the largest share (32%,) followed by Asia (23%), Europe (21%), the Americas (19%), and the Middle East & Africa (4%).

Continuing Growth Strategy

Songwon's CEO Jongho Park sees that both the demand and applications for plastics are immense, thus, there is ample growth potential for his business.

Since Park took over in 2007, the Ulsan-headquartered firm has grown to become the world's No. 2 polymer stabilizer manufacturer with over a 20% market share. Songwon reported revenues of $622.5 million in 2013 and $ 476.5 million in the first nine months of 2014. As much as Songwon surprised investors with its continuous growth until 2013, reporting a net loss of $8.2 million from Jan. to Sep. 2014, its growth has slumped compared to the previous year.

"This was caused by an unusual combination of unfavorable circumstances which all occurred at the same time," said Park.

Butti said that two key production lines experienced technical issues. Added to that, the price of raw material, which remained low at the time of contract, has risen since then, causing a margin squeeze.

However, Park believes that his company is on the growth path. "Concentrating on the fundamentals and our core polymer stabilizers business, we are looking for chemical companies that can align with us or that we can acquire." (mr) ■

Events

Biocides 2014, 10-12 December 2014, Vienna, Austria
The conference focuses on key aspects of Regulation (EU) No. 528/2012 concerning the approval of active substances and authorization of biocidal products. Presentations will include the latest developments from the European Commission and EU authorities on the core procedures and features of this nascent legislation. Besides details of this complex law, speakers will address topics such as nanomaterials, the impact of the CLP Regulation, and fees. The program also features views of the regulatory scene in the US and Turkey. Two optional half-day Workshops on topics of key interest will follow the conference. The first Workshop focuses on efficacy testing for disinfectants and preservatives. The second workshop looks at efficient use of R4BP.

► www.europeanbiocides.net

Informex 2015, 3-5 February 2015, New Orleans, USA
More than 3,000 attendees from top pharmaceutical, fine chemical and specialty chemical companies will convene in New Orleans. The 2015 conference will provide innovation-focused education sessions that lend expert guidance to ongoing industry changes. Sessions will spotlight innovation and opportunities in rapidly growing fields such as green chemistry, shale gas, personalized medicine, 3D printing and more. Some sessions also will provide attendees with insights into trade and regulation, intellectual property and the latest business trends in industries such as the fine and specialty chemicals and pharmaceuticals. InformEx 2015 will also feature a new cGMP zone in partnership with CPhI Worldwide.

► www.informex.com

6th International Gas Technology Conference - IGTC 2015, 19-20 February 2015, Dubai, United Arab Emirates
In light of the growing importance of natural gas in the global energy mix and the rapid development of new technologies in gas processing, Euro Petroleum Consultants presents the 6th edition of the established International Gas Technology Conference — IGTC 2015. The event has established itself as a leading international platform for downstream gas professionals. IGTC 2015 will be held in parallel with the 5th Russia & CIS Oil & Gas Executive Summit, allowing delegates to exchange experience with international downstream oil & gas decision makers and benefit from two days of informative presentations and quality networking opportunities.

► www.europetro.com/en/igtc_2015

DCAT Week 2015, 16-19 March 2015, New York, USA
DCAT Week, held annually in March at the Waldorf Astoria and other hotels in New York City, is one of the most important gatherings in the world for the pharmaceutical and related industries. Its unique model brings together CEO's, presidents, global sales managers and directors of supply chain management for high-level meetings, strategy sessions, education programs and networking events. Attended by thousands of industry professionals, DCAT Week and the DCAT Annual Dinner are considered the PharmaChem industry's premier events. DCAT — the Drug, Chemical & Associated Technologies Association — was founded in 1890 and is a not-for-profit, member-supported association for the global pharmaceutical manufacturing industry.

► www.dcat.org

In-Cosmetics 2015, 14-16 April 2015, Barcelona, Spain
This event brings together personal care ingredients suppliers, formulators, R&D and marketing specialists, and showcases a wide range of innovative cosmetics ingredients and technologies. In-Cosmetics offers opportunities to find new distributors, set up strategic global alliances, and grow brand awareness across the industry. In addition, an educational program runs alongside the exhibition including seminars on ingredients, raw materials, technologies and formulation techniques in the personal care industry, live presentations of selected products in interactive sessions with formulations that will be on display to try, and workshops on a wide range of topics.

► www.in-cosmetics.com

Interphex 2015, 21-23 April 2015, New York, USA
Interphex (International Pharmaceutical Expo), sponsored by PDA (Parenteral Drug Association) is a leading annual trade event dedicated to the pharmaceutical and biopharmaceutical manufacturing industry and the single source for complete biopharmaceutical manufacturing solutions to safely and cost effectively process all dosage forms for drugs. It brings over 12,000 global pharmaceutical and biotechnology professionals together with 600+ suppliers at New York City's Jacob K. Javits Center through a unique combination of exhibition, education, workshops, partnering opportunities, and networking events.

► www.interphex.com

IdentiPlast 2015, 29-30 April 2015, New York, USA
The European Commission is launching a flagship initiative to pave the way towards a circular economy as it prepares the ground "Towards a circular economy: a zero waste programme for Europe" to establish a common and coherent EU framework to promote the circular economy. IdentiPlast 2015 will gather leading international experts and provide a dynamic forum where delegates will discuss and identify the challenges and opportunities that the circular economy initiative offers. Furthermore, the event will showcase the latest cutting-edge advances in sorting, recycling and recovery technologies for plastics.

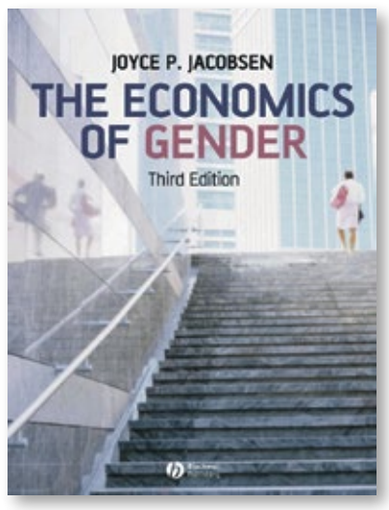
► www.identiplast.eu

CESIO 2015, 1-3 June 2015, Istanbul, Turkey
The 10th CESIO congress will showcase an extensive scientific program on the main theme "Surfactants in a Globalising World — Creating new Possibilities". In addition, business convention facilities will be offered to all participants and their companies to do business effectively and efficiently. Sessions, posters and exhibition will cover the scientific, economic, technical, as well as safety and regulatory aspects of surfactants and surfactant applications in the industry and consumer products. The CESIO Congress provides a good opportunity to meet with key contacts along the surfactant value chain to exchange information associated with technical, application and regulatory matters on the basis of the functionalities of surfactants.

► www.cesio-congress.eu

The Economics of Gender

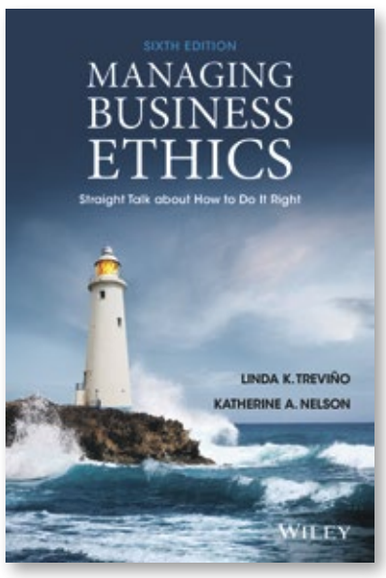
This book offers an affordable, comprehensive, and up-to-date introduction to the contemporary research being conducted on the differences between women's and men's economic opportunities, activities, and rewards. While focusing on contemporary US patterns, this text integrates an uniquely international comparative perspective. It discusses the pros and cons of various policies, including comparable worth and welfare programs. Revisions to the 3rd edition include fully updated data, inclusion of new research, and new examples and studies. Clear, readable, and provocative with helpful appendices to provide additional information for readers who have little experience with economics, while simultaneously providing further detail for the economically sophisticated.



► The Economics of Gender, 3rd Edition
Joyce Jacobsen
Wiley-Blackwell
Price: 38.90 Euro
ISBN: 978-1-4051-6182-4

Managing Business Ethics: Straight Talk about How to Do It Right

The authors bring together a mix of theory and practice in their book. In this new edition, the dynamic author team of Linda Treviño, prolific researcher and distinguished professor, and Kate Nelson, professor and longtime practitioner of strategic organizational communications and human resources, equip students with the pragmatic knowledge they need to identify and solve ethical dilemmas, understand their own and others' ethical behavior, and promote ethical behavior in their organization. Managing Business Ethics is the perfect text to prepare students for a range of roles in the business world — managers across business functions, communications professionals, compliance officers, corporate counsels, human resources managers, and senior executives.



► Managing Business Ethics
Linda Treviño, Kate Nelson
John Wiley & Sons
Price: 182.- Euro
ISBN: 978-1-118-58267-1

The Art of Problem Solving in Organic Chemistry

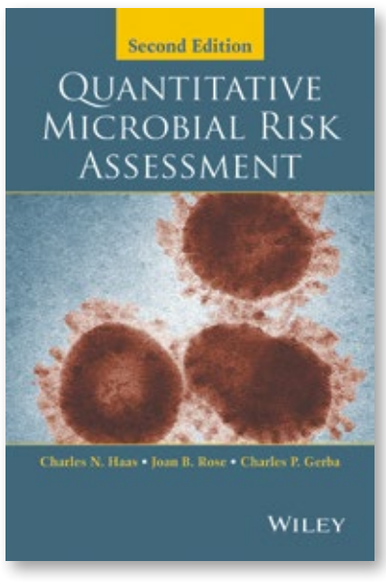
This long-awaited new edition helps students understand and solve the complex problems that organic chemists regularly face, using a step-by-step method and approachable text. With solved and worked-through problems, the author orients discussion of each through the application of various problem-solving techniques.

It teaches organic chemists structured and logical techniques to solve reaction problems and uses a unique, systematic approach; stresses the logic and strategy of mechanistic problem solving — a key piece of success for organic chemistry, beyond just specific reactions and facts; has a conversational tone and acts as a readable and approachable workbook allowing reader involvement instead of simply straightforward text; uses 60 solved and worked-through problems and reaction schemes for students to practice with, along with updated organic reactions and illustrated examples and includes a website with supplementary material for chapters and problems

► The Art of Problem Solving in Organic Chemistry
Miguel E. Alonso-Amelot
John Wiley & Sons
Price: 43.90 Euro
ISBN: 978-1-118-53021-4

Quantitative Microbial Risk Assessment

This book provides the latest QMRA methodologies to determine infection risk cause by either accidental microbial infections or deliberate infections caused by terrorism. It reviews the latest methodologies to quantify at every step of the microbial exposure pathways, from the first release of a pathogen to the actual human infection, provides techniques on how to gather information, on how each microorganism moves through the environment, how to determine their survival rates on various media, and how people are exposed to the microorganism, explains how QMRA can be used as a tool to measure the impact of interventions and identify the best policies and practices to protect public health and safety, includes new information on genetic methods as well as the techniques used to develop risk models for drinking water, groundwater, recreational water, food and pathogens in the indoor environment



► Quantitative Microbial Risk Assessment
Charles N. Haas, Joan B. Rose, Charles P. Gerba
John Wiley & Sons
Price: 112.- Euro
ISBN: 978-1-118-14529-6

People

William A. Wulfsohn

William A. Wulfsohn has been named as new chairman and CEO of US chemical producer Ashland, effective Jan. 1, 2015. The 52-year old will succeed James J. O'Brien, who will retire at the end of December 2014 after 12 years in the company's top slot. Wulfsohn, who in the past has worked for chemical companies Honeywell and PPG, moves to Ashland from Carpenter Technology Corp, where he has served as president and CEO since 2010 and was on the company's board from 2009. He has recently served on the board of directors of PolyOne. Wulfsohn earned a chemical engineering degree from the University of Michigan and received an MBA from Harvard Business School.

Thierry Desmarest, former CEO of Total, has been named chairman of the company's board and Patrick Pouyanné as chief executive officer. Following the death of chairman and CEO Christophe de Margerie in an aviation accident in Russia on October 20, the company is splitting the two top jobs for an interim period. At the end of 2015, when Desmarest, now 68, reaches the mandatory retirement age and steps down, the positions are to be merged again. Pouyanné is then expected to assume both functions. Desmarest, who was CEO from 1995 to 2007, served as chairman from 2007 to 2010, is credited with engineering Total's acquisition of Belgium's Petrofina in 1999 and the subsequent hostile takeover of Elf Aquitaine.

Chad Holliday, former CEO of DuPont, has been appointed chairman of the board of the Shell group, subject to his re-appointment as a non-executive director at the 2015 annual general meeting. Holliday will succeed Jorma Ollila, the former CEO of mobile telephone giant Nokia, who served as chairman of the Shell board for nine years. Holliday will be the first American chairman of the Dutch-based group. Appointed to the Shell board with effect from September 2010, Holliday is currently chairman of the group's Corporate and Social Responsibility Committee and member of the Remuneration Committee. He was CEO of DuPont from 1998 to 2009 and chairman from 1999 to 2009.

Dr. Thomas Wehlage, Senior Vice President Isocyanates and Precursors Europe at BASF, has been chosen by the Euro Chlor General Assembly as new Chairman of the Management Committee for a two year period. Wehlage holds a Degree and PhD in chemistry from the University of Hamburg and did a Postdoc at Harvard University, Cambridge/USA. He started his career at BASF, R&D Specialty Chemicals in 1993. After having had different functions in Europe and Asia in the areas of technical Polymers, vitamins and animal nutrition, he became Senior Vice President Strategic Planning in 2007 and Senior Vice President Inorganic Chemicals Europe in 2010. Today, Wehlage is Senior Vice President Isocyanates and Precursors Europe.

Anna Bertona, previously Group VP Strategic Planning & Implementation has been appointed Chief Strategy & Principals Officer of Azelis, effective September 1st, 2014. She also becomes a member of the Azelis Executive Committee. At a regional level, Benoit Fritz, currently Group VP Business & Principal Development Europe & Americas has replaced Michel Vandermeiren as Regional Managing Director Benelux France, who has taken on the role as Regional Managing Director Germany, Austria and Switzerland (DACH).

Simon D. Medley has been appointed as Chemtura's Executive Vice President, Industrial Performance Products (IPP) and Great Lakes Solutions. „Focus on value creation and the markets are hallmarks of Simon's disciplined leadership of IPP's Petroleum Additives and Urethanes businesses," said Craig A. Rogerson, Chemtura's Chairman, President and Chief Executive Officer. "We believe this rigorous approach will enable Great Lakes Solutions to fully meet its commitments to all stakeholders. In addition, Simon understands the sense of urgency required relative to the Great Lakes Solutions situation and can make the required impact in the short term."

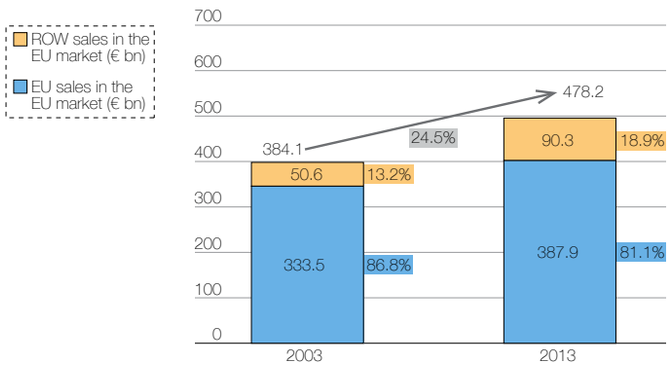
Valerie Diele-Braun has been appointed as Archroma's President Paper Solutions and EMEA. In her new role, she joins the Archroma Leadership Team. Prior to joining Archroma in early 2014 as Head of Strategic Marketing, Diele-Braun was Head of Sales and Product Management for the Personal Care Division of DSM Nutritional Products. Previously, she was Managing Director of her own consulting company, focusing on delivering world-class strategies for B2B and B2C clients. Earlier in her career she held the post of Vice President Global Key Account Management for Quest International which later became part of Givaudan. Diele-Braun succeeds Helmut Wagner, who has been appointed Chief Purchasing Officer and will be responsible for global strategic projects.

Detlef Behrens has been appointed to the role of Aesica's Vice President, Business Development, Finished Dose with Sven Wrabletz joining as Business Development Director, Finished Dose. Behrens has overall responsibility for business development and for finished dose services, covering formulation development, bulk manufacturing and packaging with a full international remit across the Group. Wrabletz is also responsible for finished dose development, manufacturing and packaging but with a geographic remit covering Northern Germany, Benelux and Eastern Europe. Both positions are based in Germany. Prior to working for Aesica, Behrens held senior business development roles at Piramal and Next Pharma. Wrabletz joined Aesica from Clondalkin, a packaging specialist.

Marco Antonio Quirino has been named President of Univar Latin America, effective September 1. In his new role, Quirino will manage the company's businesses in Mexico and Brazil in support of Univar's operations in the Latin America market. He joined Univar in May 2013 as President of Univar Brazil. Previously, he served as Business Director for Braskem's polyethylene business, and was responsible for the company's commercial and industrial operations. Prior to Braskem, Quirino was Vice President of Industrial and Commercial Operations for Quattor. He began his career and spent 20 years with Dow Chemical where he held a number of positions in sales, marketing, and general management.

Global Competitiveness of EU Chemicals Sector

Share of chemicals made in Europe in the domestic EU market

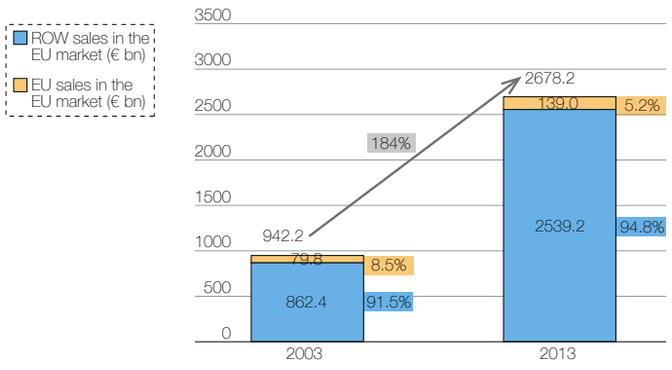


Source: CEFIC, Chemdata International © CHEManager International

Domestic EU market share

The European chemical industry, with sales of €527 billion (2013), is one of the largest industrial sectors in the EU. Despite the apparent strength of the industry, the current situation gives cause for concern. The global chemicals market doubled in the period 2003-2013. Europe has participated in this global growth, with chemical sales steadily rising in absolute terms in the past decade. However, due to stronger relative growth in other parts of the world, the EU's share of global sales decreased significantly over the period (from 32% in 1993 to 17% in 2013). What is worrying is the decline in domestic market share over the past ten years (Fig. 1).

Share of chemicals made in Europe in the Rest-of-World market

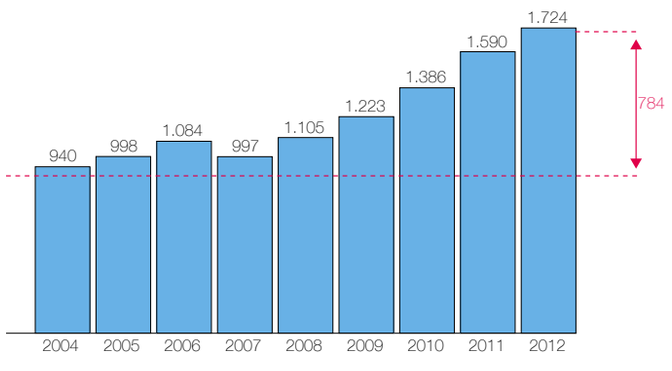


Source: CEFIC, Chemdata International © CHEManager International

Rest-of-World market share

In addition, the European chemical industry, which is an exporting industry, with one-quarter of its production being exported outside the EU, is also losing share in the Rest-of-the World market (Fig. 2). The key question is therefore whether the decline in global share is entirely due to the "growth rates" effect or is the sector also losing competitiveness? In order to have a systematic approach to estimating the competitiveness of Europe, CEFIC commissioned Oxford Economics to analyse the situation. The study confirms that the greater part of the decrease in export market share observed over the past 20 years is due to declining competitiveness.

Cumulative number of EU regulations on Health, Safety & Environment*



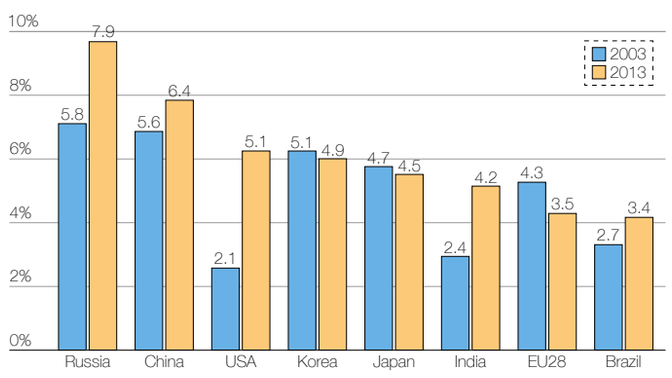
*net of those repealed

Source: CEFIC, European Union Directory of EU Legislation in Force © CHEManager International

Costs of implementing legislation

The analysis revealed several potential causes for this loss in market share. One important factor cited by companies as affecting competitiveness is the growing cumulative costs of implementing European legislation in the chemical sector. Fig. 3 reveals the cumulative number of EU regulations on Health, Safety & Environment repealed since 2004. This takes both personnel and capital resources away from innovation and production and into regulatory compliance, which clearly reduces the competitiveness of the European industry compared with other regions. Disadvantaged energy and feedstock prices are another clear disabler of competitiveness.

Capital spending intensity by region
% sales



Source: CEFIC Chemdata International 2014 and CEFIC analysis © CHEManager International

Comparison of capital spending intensity

A clear indicator is the cost of producing ethylene, the highest volume building block in the chemical industry. Making ethylene in Europe is about three times more expensive than in the US (due to the shale gas boom) or the Middle East. This is boosting profits abroad and attracting billions of dollars in investment. The more investment the more competitive the region becomes and vice versa. In the EU we see declining levels of capital spending intensity compared with other regions (Fig. 4). For example, the US (with nearly 200 chemical investment projects totaling nearly $130 billion) and the BRIC countries remain the key targets of chemical investment.

European Plastics Industry Addresses Competition Hurdles

In a Manifesto on the Competitiveness of the Plastics Industry in Europe, the two organizations representing plastics producers and processors – PlasticsEurope and European Plastics Converters (EuPC) – have called on EU policy makers to help the industry compete internationally and not throw stones in its path.

An especially pressing problem for the plastics industry, as the organizations point out in the manifesto, is that "there is no level playing field in Europe regarding energy cost, as there is no harmonized energy market."

This energy deficit is seen as especially challenging in competition with North America, where shale gas has improved local producers' position enormously. Toward strengthening Europe's hand, PlasticsEurope and EuPC want EU leaders to "enable responsible exploration and production of shale gas."

A second issue plastics producers and converters believe needs addressing is the growing shortage of skilled labor. As the number of science graduates and technical apprentices is declining, they recommend introducing plastics manufacturing, converting and recycling into the school curriculum, along with a European superior level degree in plastics.

As regards infrastructure, the industry believes European institutions should encourage more investment, and also address deficits in energy efficiency.

To pull another thorn from their side, plastics producers would like to see the EU encourage a "risk-based approach with evidence-based assessment to inform political decision making." Toward this goal, they have called for chief scientific advisers to be named not only to guide the European Commission but also national governments.

The plastics manifesto also urges that the sector be included in discussions related to reindustrialization, recycling and waste management.

Pointing to the sector's crucial importance, PlasticsEurope president Patrick Thomas stressed: "The European plastics industry is a strategic pillar of the manufacturing sector, with a huge capacity for innovation and a knock-on effect on other key areas of the economy. "We are determined to invest in Europe's future and work with policy makers and other key stakeholders to shape a sustainable growth roadmap for the European plastics industry," Thomas added.

EU Proposal on Plastic Bags

Last week, PlasticsEurope has expressed its concerns regarding the agreement reached between EU member states and negotiators from the European Parliament on the proposal on plastic bags. The European plastics industry fears that the possibility for Member States to ban lightweight plastic bags sets a precedent which will lead to a patchwork of national regulations on other types of packaging as well, thereby creating trade barriers and hindering the EU internal market.

"The possibility to ban plastics bags goes against the general principle of the Packaging and Packaging Waste Directive. It opens the door for members states to ban not only plastics bags but other types of packaging as well. Such an inconsistent political framework would hinder investments and innovation and would create barriers to trade in packaged goods in Europe" said Karl-H. Foerster, Executive Director of PlasticsEurope.

The European plastics industry, however, supports the imposition of a fee or tax on all carrier bags irrespective of the material, as it would effectively prevent littering. (dw) ■

Iconic and exclusive – The Harley Davidson Super Sport Roadster (SSR) Breakout model is a premium custom motorcycle that mixes top-of-the-line features and detailing with a low, long and slammed power profile. On this 2014 limited-edition CVO Breakout Softail model, French manufacturer Odyssey Motorcycles is responsible for the carbon fiber bodywork and exclusive detailing on the gas and oil tanks. Where mechanical fasteners, such as rivets add unwanted weight and limit profile options, adhesives provide a better bonding solution, optimizing lightweight structures and providing greater versatility in design. Odyssey has specified Huntsman's Araldite 2031 epoxy adhesive for use in the custom-build process on the motorbike. The adhesive is used to bond the carbon composite fuel tank shells and the aluminum parts on the front fairings. Araldite 2031 delivers a tough and weatherproof finish, which is important for maintaining the bike's high aesthetic finish.

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