CHEManager EUROPE

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THE NEWSPAPER FOR THE CHEMICAL AND LIFE SCIENCES MARKETS

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Newsflow

As a result of a massive decline in demand, BASF is reducing production. The company is temporarily shutting down around 80 plants worldwide and is reducing production at approximately 100 plants. Worldwide, an estimated 20,000 employees will be affected by the production cuts.

Akzonobel is to increase MCA (monochloroacetic acid) production capacity at its Taixing site in China to 60,000 mt/year. "This investment demonstrates our strong commitment to serving the growing Chinese market," explained Lars Andersson, General Manager of AkzoNobel's MCA business.

Sabic and Exxonmobil Chemical have signed a Heads of Agreement (HOA) and are progressing detailed studies for a new Elastomers project at their petrochemical JVs Kemya and Yanpet in Saudi Arabia. This project is aligned with Saudi Arabia's National Industrial Cluster Development Program which is responsible for accelerating growth and diversification of the manufacturing sector.

Glaxosmithkline has bought Astrazeneca's over-the-counter (OTC) painkiller unit AZ Tika for £146 million. The acquisition reinforces Glaxo's drive to expand its consumer healthcare business, and reflects the commitment of new CEO Andrew Witty to broaden Glaxo's healthcare portfolio to reduce risk.

Pathway To Growth

Eastman Continues Restructuring to Stay Ahead of the Game

Strategy – Eastman Chemical Company has undergone a strategic three step restructuring plan in the last few years. Step one in 2005/6 encompassed significant divestments' followed by refocusing on the company's core growth during step two in 2006/7. Finally, earlier this year the company entered step three and is now focusing on deploying the growth. Ana Wood spoke to Godefroy Motte, Vice President/Managing Director for EMEA at Eastman Chemical Company, about the company's strategy and future plans.

Godefroy Motte
Vice President/Managing Director EMEA at Eastman Chemical Company

CHEManager Europe: Can you please describe the strategy behind Eastman's ongoing restructuring?

G. Motte: The world is a dynamic place. Economic challenges drive the need for ongoing restructuring. Like every company, Eastman is trying to optimize our businesses based on our core strengths. One increasingly important motivation is to achieve a more focused portfolio. A more focused business is not only easier to optimize and manage, but is also more likely to generate better return. Our objective is to leverage our heritage of expertise and innovation in acetyl, polyester and olefins streams to drive growth in key markets. For each of these chemistries, Eastman has developed a combination of assets and technologies that are operated within those three manufacturing streams.

What direction is Eastman aiming to take in Europe in light of this re-organization of the business?

G. Motte: Our strategy for growing businesses is driven by our customers, not our plant sites. We focus on placing sales and marketing people close to our customers – and to our customers' customers – to develop and then service them. So we launched a strategy to expand to the new geography that I would call outside Western-Europe e.g. Russia, Poland and Turkey. The borderless nature of the chemical industry allows us to manufacture our products where we have the competitive advantage and ship them to the regions.

What benefits have you seen from the restructuring?

G. Motte: Over the last several years, we've divested about $2.5 billion of revenue in our portfolio. Those businesses typically had low single digit operating margins and were more susceptible to cyclicality. So by taking these actions, not only have we improved profitability, but we've reduced Eastman's exposure to cyclicality by a third. So, what you have left is a company that has become more resilient with more consistent earnings. Europe has been growing 10% in revenue in the past five years. In Europe we used to be 2,000 people, now we are about 700 people, but in term of turnover we did not lose more then 30%, because while we were divesting, we were focusing on the growth and we were able to compensate part of the divested revenue by additional revenue in the growing business and growing countries. We are now a profitable region.

What are the company's future plans in terms of acquisitions?

G. Motte: We are interested in acquisitions. However, those acquisitions must fit our strategic profile and the businesses that we have currently in the portfolio, more of a bolt-on type of strategy. At this point, we have not found anything that has that good strategic fit or is at the right value proposition. It may be the right time right now with a lot of European chemical companies being under value, but it is again not a question of price, it is a question of strategy.

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The Long Haul

Alfa Aesar Looks Down the Road

Uncertain Times – The international financial crisis and unstable oil costs have taken their toll on all industries across the board, including API suppliers. Alfa Aesar, an international manufacturer, supplier and distributor of fine chemicals, metals and materials, has also taken note of the changes to the market. Brandi Schuster asked the company's president, Barry Singelais, about how he sees the future of the industry.

Barry Singelais
President, Alfa Aesar

CHEManager Europe: How has your business been affected by the high cost of energy?

B. Singelais: We have been successful to date in minimizing the effect of rising energy costs, but there is no doubt that they will be impacting our business and our customers in the coming months. In fact, we have recently experienced significant price increases from some vendors while others are forewarning of large jumps in prices.

What have you been doing to combat the trend?

B. Singelais: We are pushing forward with sustainability efforts, a focus of Alfa Aesar and our parent company, Johnson Matthey, but short to medium term pressure on prices in all sectors will be felt in price increases industry-wide.

What issues do you see shaping the industry in 2009?

B. Singelais: The shift of portions of markets from one continent to another, volatility in currencies trading, and emerging markets for green technologies has made the chemical market a highly fluid entity over the past five to 10 years. I would be hard pressed to identify one thing that will change the industry, but I think that the evolution of the world economy will present the greatest challenge for and ultimately determine the direction the industry takes. Companies able to adapt quickly to changing regulations, customer requirements and service needs on a global scale will be the most successful.

Do you think APIs and excipients are adequately regulated? If no, what must be improved?

B. Singelais: From the standpoint of a supplier into the API market, which Alfa Aesar is, we would support greater clarity and consistency in regulations across international boundaries rather than necessarily more regulation. We feel that if our customers have a solid framework within which to make key decisions, they will be innovative in developing new products and we will benefit. If new regulations are necessary in certain markets to create a level playing field, regulatory consistency, and a better quality of life for workers, then we would support that effort.

What role do countries such as China and India play in terms of competitiveness for your business?

B. Singelais: China and India are areas of tremendous opportunity for Alfa Aesar. Our growth over the past 10 years has given us the critical mass to expand into developing markets with full blown offices and distribution centers to service those markets as well or better than the competition. We are enjoying and looking forward to the challenge those markets represent.

Competition for pharmaceutical projects is getting tougher. How have development partnerships been changing over the years?

B. Singelais: As much of the competition comes from places like India and China, we are endeavouring to go where the business is in order to provide the same service levels as we offer in the western hemisphere. The challenge for Alfa Aesar is selecting and employing the right strategy at the proper time in each country while expanding in our traditional markets.

What are the major requirements of pharmaceutical customers when choosing a development or manufacturing partner?

B. Singelais: From the standpoint of a raw material supplier, Alfa Aesar is focused on delivering quality products quickly at competitive prices whenever possible. Our pharmaceutical customers are asking for the same service in the emerging markets as they enjoy in the U.S. and Europe. They want to buy those products from a supplier that can sustain its service at a high level over the long haul.

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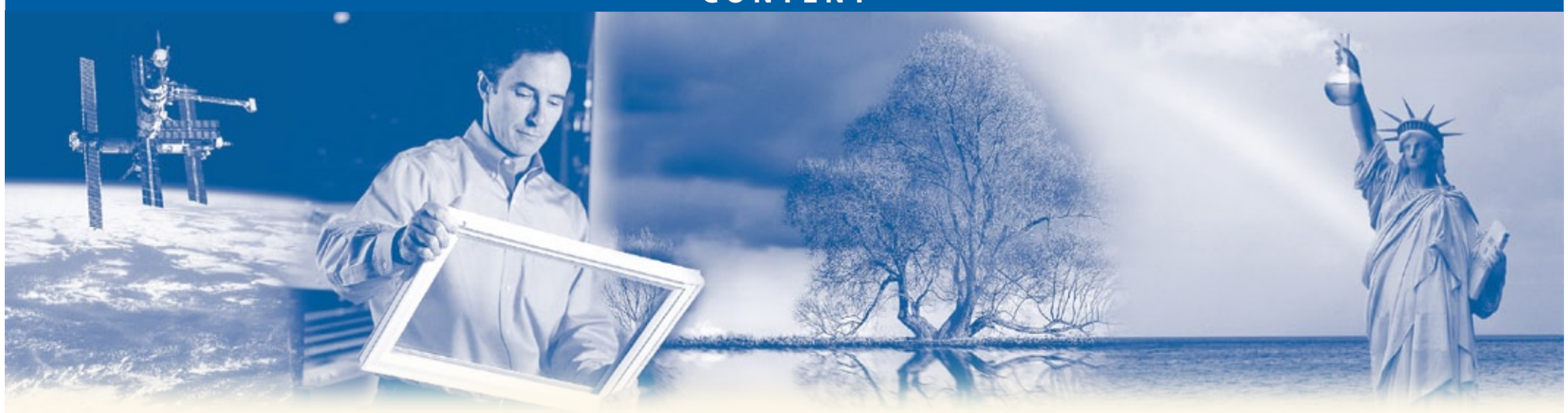

Merck Q3 Profit Rises

Merck said 3Q operating profit rose 6.1%, almost matching expectations, on higher sales of its Erbitux cancer drug. The company, which last year took over Swiss biotech firm Serono, said earnings before interest, taxes and exceptional items, rose to €309 million, compared with analysts' average forecast of €310 million. Net income rose to a slightly-less-than-forecast €200 million. The earnings before interest (EBIT) margin at its liquid-crystals unit, which supplies the chemicals for flat-screen televisions, dropped to 47% from 50.5% a year earlier, at the bottom of the 47–52% margin range targeted by Merck this year. Sales of cancer treatment Erbitux, Merck's most promising drug, rose to €134 million. ■

Solvay Q3 Above Expectations

Belgium's Solvay reported a better than expected 6% decline in operating profit as its earnings from pharmaceuticals and chemicals fell but plastics were surprisingly flat. Recurring earnings before interest and tax (REBIT) amounted to €292 million, compared with an average forecast of €258 million. Revenue rose 4% to €2.49 billion, against an average poll forecast of 2.38 billion. Net profit fell 68% to €75 million, versus the average forecast of 153 million. High energy and raw materials costs squeezed chemical margins but Solvay managed to push through prices for caustic soda and vinyls. The company repeated that overall results would be weaker than those of 2007, but the operating profit of pharmaceuticals should be better. ■

Generic Drugs to Benefit from Obama

The generic drug industry will benefit from the administration of U.S. President-elect Barack Obama as it seeks to cope with the global financial crisis, Teva Pharmaceutical Industries' chief executive Shlomo Yanai said. "I think Teva will benefit from the situation as the generics global leader, we are ready, we have the right strategy for growth ... and we believe that generics' potential is going to grow." ■

Bristol, Lilly Improve Forecasts

U.S. drugmakers Bristol-Myers Squibb and Eli Lilly posted better-than-expected third-quarter profits on double-digit sales gains, although results were marred by special charges related to either government probes or soured investments. Both companies also gave improved forecasts for the rest of the year, and their shares rose recently. Drugmakers have largely surpassed expectations this quarter, despite some setbacks, proving their potential value as defensive investments during the economic turmoil. Still, like most of their rivals, Bristol and Lilly both face questions over their long-term profitability because of patent expirations to top products and uncertainty with their pipelines of experimental drugs.

Bristol's blood-clot preventer Plavix and Lilly's schizophrenia drug Zyprexa – the companies' respective top-selling products – will lose U.S. patent protection in the next few years, and the companies face skepticism that they will be able to make up for the lost revenue. For the quarter, Bristol said it earned $2.58 billion, or $1.29 per share, compared with $858 million, or 43 cents per share in the year-ago quarter. The results reflect a $2 billion after-tax gain from the sale of the ConvaTec unit in August. The company affirmed it expects compounded annual earnings growth from continuing operations of at least 15% from 2007 through 2010.

Lilly said it lost $466 million, or 43 cents per share, as it booked $1.48 billion in charges for probes related to Zyprexa. That compared with a year-earlier profit of $926 million, or 85 cents per share. But excluding special items, earnings rose 14% to $1.04 per share, two cents ahead of estimates. Sales rose 14% to $5.21 billion, topping analysts' forecast of $5.09 billion, as sales of its depression treatment Cymbalta soared 40% to $716.4 million.

Lilly raised its 2008 forecast, excluding items, to $3.97 to $4.02 per share, from its previous range of $3.85 to $4.00. ■

Dupont Sues Invista

Chemical company Dupont sued ex-partner Invista, claiming unauthorized use and misappropriation of trade secrets in Dupont's nylon engineering resins or polymers business.

Invista in turn accused Dupont of not meeting its obligations ranging from environmental, health and safety indemnities to confidentiality and protection of intellectual property it sold to Invista. The lawsuit said Invista had contacted various Dupont engineering resins customers in recent months, offering for sale its manufactured nylon engineering resin products and informing them of Invista's ability to make nylon engineering resin products. A U.S. judge has dismissed a lawsuit filed in August by Invista which accused Dupont and France's Rhodia of conspiring to steal proprietary technology used in nylon production by privately held Koch Industries. Koch bought Invista from DuPont for more than $4 billion in 2004. Invista had sought to block Dupont and Rhodia from using and disclosing its technology for producing adiponitrile (ADN), a chemical used in the manufacture of nylon. Invista contended it bought the ADN technology from DuPont as part of the 2004 transaction. ■

Sanofi Raises 2008 Guidance

Sanofi-Aventis raised its growth forecasts for the year. In December, the company will get a new chief executive, Chris Viehbacher, who is expected to help fix an ailing pipeline of drugs under development through mergers and acquisitions. Adjusted net profit rose 1.9% to €1.888 billion ($2.47 billion). Vaccines are a growth area for Sanofi and it recently bought British vaccine maker Acambis in a deal highlighting big drug companies' hunger for biotech assets that can help prop up pipelines and fend off generic competition.

Sanofi is in dire need of new blockbuster medicines that can help compensate for sales losses of other drugs due to generic competition and to new branded rivals. The company is the cheapest among the world's pharmaceutical companies in the DJ health care titans 30 stock index after Pfizer and Merck due to concerns about the lack of new products and competition from cheaper generics. Sanofi shares are trading on about nine times their expected 2008 earnings per share, compared with Pfizer's seven times and Merck's 8.7 times. Pharma shares are seen as a defensive investment during economic downturn as health spending remain solid. ■

Exxon's 5-Year Capex Plan Intact

Exxon Mobil CEO Rex Tillerson said the company's five-year $125 billion capital expenditure plan remained in place despite the recent drop in oil prices. "That still looks pretty much in place," said Tillerson. He said it was too early to say what the impact of the drop in oil prices would have on spending. "I think it is too early to tell. We have to wait and see where the dust settles." Slumping fuel demand in developed economies like the U.S. and the mounting global economic crisis have weighed on oil prices. ■

Pathway To Growth

Eastman Continues Restructuring To Stay Ahead of the Game

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How important are regions such as Asia, Russia and the CEE for Eastman?

G. Motte: In seeking growth opportunities, companies are tempted to follow the trend to rush to Asia. But in my opinion, it is not a question of China or Central Europe. We need to go after both – it is not a zero sum game. One of our regional growth opportunities was to go east and to expand in CEE. The region offers attractive features: movement of our customers' customers, market size, strong economic growth and improved consumer spending levels.

In what regions in the world do you expect the most growth?

G. Motte: We are seeing the impact in a gradual shifting of our regional performance. Sales revenue is about 60% from North America and 40% from the rest of the world while, on operating earnings basis, the ratio is closer to 50–50. Rising standards of living are having a positive impact on demand for our specialty chemicals used in higher quality products. In Russia, Poland, Turkey and across Eastern Europe higher incomes drive growth within most of our core businesses: Packaging, Coatings and Adhesives.

2008 marks the 25th anniversary of the start-up of Eastman's first gasification plant, congratulations. At present the company is involved in a new gasification project in the U.S.; where do you see this technology going?

Godefroy Motte
Eastman

G. Motte: Yes, we have just celebrated a significant milestone at our coal-to-chemicals gasification facility in Kingsport, Tennessee. Eastman manufactures over a billion pounds of acetyl chemicals from approximately 500,000 tons of Appalachian coal per year. Since 1999, reliability of the dual-gasifier system that Eastman uses has consistently exceeded 98% on-stream time. Because of the success of the facility, Eastman has decided to employ the same basic technology in building a new gasification facility in Beaumont, Texas. The new facility, which should come online in 2012, will use petroleum coke as a feedstock to manufacture hydrogen, methanol and ammonia. Since gasification technology is a proven technology and can be used to convert feedstocks such as coal and petroleum coke into electric power, steam, hydrogen, fertilizer and chemicals, we are continuing to work to identify additional gasification projects where we can use our expertise.

Will the new gasification facility in Texas incorporate carbon capture technology?

G. Motte: Yes, especially since the Gulf Coast region in which our new plant will be located has multiple opportunities for use of carbon dioxide in enhanced oil recovery (EOR) applications. We expect to secure a long-term contract for sale of its carbon dioxide into EOR applications for the Beaumont facility.

How has Eastman been dealing with the high cost of feedstock and raw materials?

G. Motte: Like everybody we are squeezed between the increasing raw material and energy cost. Since the beginning of 2006, we had to deal with nearly $1 billion in raw material and energy costs. For the most part, we've been able to address those increasing costs. This has really been attributed to our continued focus on pricing execution, as well as taking advantage of continued high operating rate in a number of our businesses and markets. In addition to pricing actions, Eastman benefits from integration, particularly our coal-based acetyl stream. The actions we're taking to address raw material volatility and improve profitability will translate into reduced cyclicality in our earnings.

How does Eastman deal with different laws and regulations in the various countries it operates in? For example if the company's internal policy is stricter than the law in a given country, do you comply with the internal policy or do you follow the country's law to avoid competitive disadvantages?

G. Motte: This is very simple: The strictest always applies. In some cases, such as environmental policies, our internal policies may be more demanding than the local ones. Our internal auditors determine the gaps and we are to close those gaps within an agreed-upon schedule. In other cases, mostly HR policies, the local regulations impose a different set of rules/regulations and we adjust our internal rules to the local processes.

Many companies struggle with aligning their business strategy with social and environmental concerns. How does Eastman address these issues?

G. Motte: Eastman strives to operate all aspects of its business in a sustainable manner. This means balancing and satisfying a triple bottom line of economic, environmental and social performance. Our overarching philosophy is to promote sustainable development concepts which meet the needs of the present without compromising the ability of future generations to meet their own needs. Within that overarching philosophy, each of our businesses has the flexibility to grow and tailor solutions to meet the needs of its stakeholders. We communicate key activities and results related to sustainable development in the Annual Responsible Care Report and Corporate Citizenship Report. I think, one of the problems we are seeing is that the chemical industry is not communicating well to the outside about the practical solutions, that we bring, and demonstrating, that we are part of the solution, and not part of the problem.

▶ www.eastman.com

Dow Chemical Profit Tops View

Dow Chemical posted a lower third-quarter profit recently, citing a drop in sales volumes and shutdowns from hurricanes, but price increases and strong results from its agricultural business helped earnings beat expectations, sending its shares up more than 5%. However, the U.S. chemical maker cautioned that the global economy was likely to suffer through a recession for most of 2009 and that the pace of growth in emerging economies was beginning to falter. Dow, which earlier this year raised prices for all its products because of surging energy costs, was forced to shut down a large part of its North American operations in September because of damage from hurricanes Ike and Gustav. Those storms, coupled with sinking global demand and the sale of some assets, reduced quarterly sales volumes by 9% from a year earlier. Like other chemical makers, Dow has suffered because of the jump in oil and natural gas prices, which peaked in early July. Even with a 50% drop in energy costs over the last three months, Dow's energy and raw material costs rose $2.6 billion from year-earlier levels. Net income rose to $428 million, or 46 cents a share, from $402 million, or 42 cents a share. Quarterly revenue rose 13% to $15.4 billion, driven primarily by price increases. ■

Lanxess Raises Guidance for 2008

Lanxess has continued on its path of growth and is increasing its earnings forecast for the full year 2008. The company now expects earnings before interest, taxes, depreciation and amortization (EBITDA) pre exceptionals to come in at between €710 million and €730 million. Lanxess is confident of achieving operational sales growth for the current year as a whole.

All segments grew sales in the third quarter. Throughout the group, the increases in raw material and energy costs were again successfully passed on to the market through selling price increases.

Operational sales of Lanxess rose in all regions. The company expects the financial market crisis to continue to impact the real economy in the coming months, resulting in a weaker overall economic climate for the remainder of fiscal 2008. The economic prospects for North America and Western Europe will continue to deteriorate. There should be a moderate stimulus to growth in Asia-Pacific, central and eastern Europe and Latin America. However, the global decline in consumer spending is likely to have a dampening effect on these economies as well.

Global chemicals production for the full year 2008 is expected to be below the level of 2007. The prospects for key customer industries, most notably the construction and automotive sectors, continue to worsen. The global tire market displays regional variations, with continuing stable demand for high-performance rubbers in Asia but declining volumes in North America and Europe. ■

Celanese Adjusts 2008 Outlook

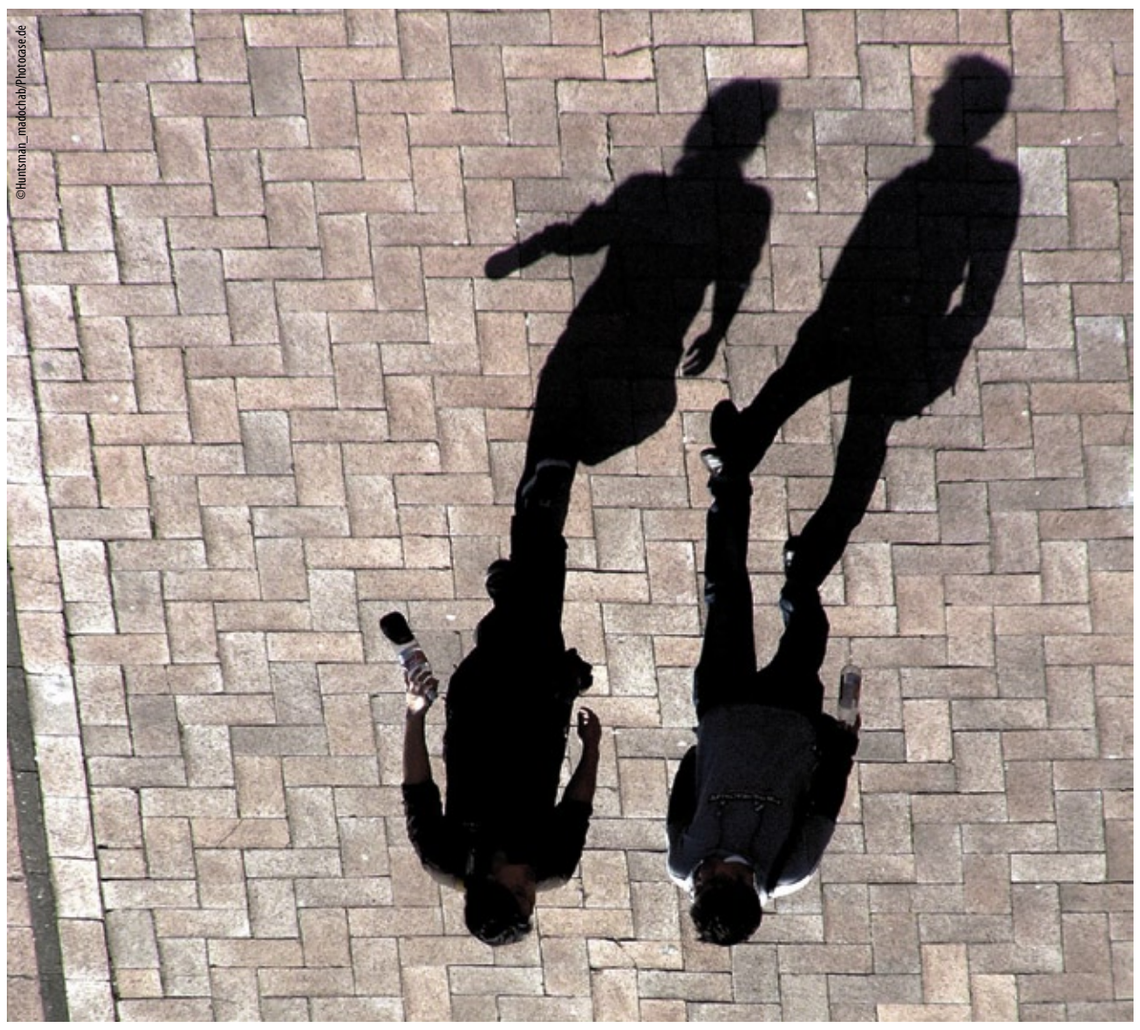
Celanese reported net sales of $1.823 million, a 16% increase from last year, primarily driven by higher pricing, increased volumes in acetyl intermediates and positive currency impacts. Operating profit rose to $151 million from $147 million in the prior year period. Higher raw material and energy costs offset the positive impact of increased sales. Net earnings were $158 million compared with $128 million in the same period last year. Adjusted earnings per share for the 3Q were $0.78 compared with $0.73 in the prior year and excluded a net of $20 million of other charges and adjustments primarily associated with insurance recovery, the planned Pampa plant shutdown and costs related to the company's revitalization of its Industrial Specialties businesses. This quarter's results included approximately $15 million of impact related to Hurricane Ike. Operating Earnings before interest, taxes, depreciation and amortization (EBITDA) increased to $314 million, a $12 million increase from the same period last year. Net sales for the first nine months of 2008 were $5.537 million compared with $4.684 million in the same period last year, driven by higher pricing, additional volumes in the acetyl intermediates business and positive currency impacts. For the remainder of 2008, the company expects the economic slowdown in North America and Europe to continue and also sees recent signs of slowing growth in Asia linked to the global credit crisis. Due to these factors, and their impact on overall volumes, the company updated its full year 2008 outlook for adjusted earnings per share to between $3.40 and $3.55 from its previous guidance range of between $3.60 and $3.85. ■

The Importance Of Price

Effective Price Management, From Value Creation to Value Extraction

The Price is Right –**The chemical industry has faced significant challenges in its recent past, from raw material price increases to commoditization of markets. When trying to change the model from commodity business to specialty chemicals, emphasis has been put on value creation by trying to adapt the best marketing techniques used in other industries around value creation. While the theory is interesting, application has proven to be difficult.**

Lionel Breuilly
Huntsman



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Price is the only way to extract value that companies have created, and this implies charging high prices for products. This may seem like an obvious and simple statement. However, applying high prices is the most difficult thing to do as competition is preventing it by often pushing prices down. The economic liberal model in which we are acting is built on the principle that competition is healthy. The well-known micro-economy rules of demand vs. price and supply vs. price are always keeping the demand equal to supply and is the most efficient model to maximize welfare for the entire society. This model uses the hypothesis that a product can be made by different producers with identical benefits or similar performance, that information is fully transparent and that cost of trading is low.

The beauty of the model resides in its simplicity, as no coordination between players is needed. Coordination is even illegal, as it may conclude to distortions of the model by creating cartels (a way to introduce competitive bias). For us as chemical producers, it makes our lives difficult since chemical products can be easily compared through formulas, datasheets, properties, purities, etc. All of these are very measurable aspects where marketing rules about value creation have been found difficult to apply. The increasing flow of information via internet and globalization of economy is creating opportunities for producers from different continents to promote their products outside of their natural territory and thus creating increased competition. This is competition that sometimes comes with a much lower cost base than European or American companies. This pushes the supply/price curve down and often comes close to the cost basis. Even in an oligopolistic market, we see that market-share fighting between the few competitors pushes prices down. Dr. John F. Nash, 1994 winner of the Nobel Prize for Economics, has demonstrated this aspect well in his game concept putting theory justification on the business expression "price that goes down will never go up". All of this results in strong pressure on margin. There are numerous books, literature and marketing concepts about value creation and escaping from the commodity trap, but the implementation is almost never considered.

Convert Marketing Concepts into Price for Value

In order to set pricing as the translation of value, one needs to fully understand the customer's benefits but also their perception of products. Ideally, the pricing approach should be included in the strategic process. From segmentation of markets, the strategic process should first consider key customer needs in a detailed approach. If marketing roles are natural leaders for this process, building a detailed analysis by using the sales force has proven to be very efficient as the market knowledge is maximized and the analysis can include a lot of competitor's information.

Active sales force participation is also a guarantee for getting all the customers' insights, full understanding of the customer's values and quanitifying it. This information is of high importance in a latter stage of the process, when defining an offer that can be more differentiated. These value analyses and perceptions also allow for the addition of products features, finding differentiated benefits, focusing on real value and changing the company offering by adding services. More classical marketing analysis are also needed, such as market size, level of competition, company capacities in terms of research and development, production, etc.

Combining market and company data allows the building of a matrix, showing probability of success and helping to define general approach for every market segment. From "build aggressively" to "harvest" or "exit", the strategic decision at that stage is critical, as it will influence all company activities. There is great importance to be sure this decision is based on the best knowledge possible.

From this stage, classical marketing approaches can be applied with definition of the four Ps: product, place, promotion and price. The best analysis in the early stage will result in accurate positioning of the offer. Lastly, this strategic position needs to be converted into numbers (list prices, floor prices). Again, the knowledge of customers is key here while trying to quantify value. By growing interest, we can see prices being placed at cost (filling capacity), offer a very good deal (low cost approach), same level as competitors or looking for a premium position. Crossing this approach with benefit, trying to understand what value can be extracted also by considering costs, customers would decide to do the same, giving a huge range of possibilities. We very often see three major approaches in chemical pricing: commodity approach, where filling assets is key; the price fixed under "cost plus" model for the short term due to high dependence on raw materials; and the strong alignment with market price, as the differentiation elements are low.

The molecule approach is more interesting and can be applied when chemicals present some kind of unique properties and are used by customers as raw materials. The price can then be based on the more added-value approach and can be a reflection not only of cost but also include value for innovation. Adding services is also key. Services in the chemical industry can take various forms: special formulations; packaging; supply chain benefits; bundling with other chemicals going into same application; or taking responsibility of final performance are all powerful ways to create value.

Interest of Centralization

There is an on-going debate about how to manage prices on a daily basis. Should it be in the hand of sales or centralized? On one hand, sales people are in the best position to extract maximum prices, as they have better customer intimacy and are fully informed of the competitive situation. Also, giving them price control is a way to simplify and speed up negotiations. However, our experience shows that the benefits from being centralized are prevailing over these. The central price office is more able to apply the concept described earlier, connect with marketing to apply the value-added approach and create price lists aligned to business strategies. It also allows for a uniform pricing structure for a region, for example Europe, limiting cross borders business. Key account management is also requesting this central approach, as it prevents the danger that every sales person is essentially running his or her own business.

Central price management is often seen as a key parameter in trying to reduce the margin waterfall, eliminating all mistakes between agreed and applied prices, deleting rebates, all pricing errors that are often quantified in few percent of total sales. Low value business elimination is also much easier in a move to specialty chemicals. Last but not least, the central management is very efficient in anticipating trends, communicating to sales force and taking preventive measures (prices variations campaign). In a time of high raw material fluctuation, this can be a strong competitive advantage, allowing for the maintenance of company profits. We have seen that the lost of flexibility for the sales force is often compensated by more sales activity and better business focus, as associates are forced to de-focus from low value opportunities.

Should We Fire Our Worst Customers?

All companies have a portfolio of activities and customers that are more or less profitable and a recurrent question is what to do with them? Keep them? Fire them? Pass them through the distributors? The question is not easy and there is no one-size-fits-all answer. First, it is important to understand what the criteria for consideration are. Most companies don't focus only on sales, recognizing that margins are more important. But what margin? The contribution margin (revenue minus cost of goods sold) is a better indicator for basing decisions. However, it does not capture plant fixed costs and can be misleading. It is easy to understand that gross margin (contribution margin minus plant fixed costs) would even be a better indicator. However, the gross margin is not always maintained in a proper way, fixed costs being subjective to capacity utilization and costs sharing rules used. Also, it does not include costs coming from research, technical support and sales.

The ultimate and more complete indicator is the EBIT (gross margin minus all others fixed costs, research, sales, and administration). Usage of EBIT as criteria for customer or product selection is not very popular, as it is very rare to have an analytical system able to track down details up to the transaction level. Managers should use carefully these indicators and consider them only in the global picture. Even the EBIT can lead to wrong decisions and push into a downward spiral of deleting activities that absorb fixed costs. Firing worst customers or slashing product offerings is widely done as it allows cleaning of a portfolio and going for a simpler business model. However, there are a number of risks in addition to those previously mentioned.

First, it sends business to your competitors that they may be able to manage better than you do, or to reach critical mass allowing them for a profitable model that they otherwise would not have. You also restrict your possibilities to find additional opportunities. Lastly, you give the indication that remaining business is all strategic high profits, and competition will fight for it when they identify this. Instead, there are a number of ways to improve the situation. An example can be to reward better behaviour (push bulk orders, surcharge small orders, delete consignments, decrease payment terms). It is also possible to increase customer relationship in order to get better predictability (better forecast, working capital reduction) or charge additional service to make customized items. Using a distributor network is a very efficient way to manage the fragmented demand and keep low costs to serve. The last published research from Wharton has demonstrated how firing bad customers decreases company profits.

Pricing is a complex subject, as it must reflect trends and influences often in contradiction. However, it is the link that will extract value that companies are creating, and it deserves to be carefully considered and managed. There is a lot for chemical companies to learn from other industries, and this is an easy way to fast improvement of profitability.

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www.huntsman.com

Teva Pharm Q3 Rises on Higher Sales Teva Pharmaceutical Industries beat forecasts for 3Q net profit, due to strong drug sales and a lower tax rate. Quarterly net profit beat analysts' expectations by two cents a share. Net income for the quarter ended Sept. 30, at the Israel-based company increased to $637 million, or 77 cents per diluted share, from $525 million, or 64 cents per share, a year earlier. Sales rose 20% to a record $2.84 billion. Teva said it expects its $7.46 billion acquisition of Barr Pharmaceuticals to close in late 2008. ■

Rhodia Keeps Full-Year Goals Rhodia stuck to its forecasts for 2008 as its ability to pass on higher raw material prices to its customers helped 3Q performance and said it was hopeful for further growth. But the company maker also signaled the first signs of lower demand for products from its Polyamide unit, its biggest division, due to a slowdown in the car and textile sectors. Its earnings follow those of Swiss rival Clariant and Ciba. Rhodia said it had been able to pass on higher raw material prices to its clients. Its record 14% price hike in the quarter fully offset record raw material and energy prices and a negative impact from currency swings. Third-quarter net profit rose 24% helped by the sale of a business unit. ■

Henkel Lowers Goals Henkel posted a 6.3% rise in 3Q adjusted operating profit, slightly below estimates, as high raw material prices weighed. The company lowered its 2008 forecast, expecting earnings before interest and tax (EBIT), adjusted for restructuring charges and one-offs, to grow about 10% from €1.37 billion in 2007. Third-quarter adjusted EBIT rose 6.3%. Sales rose 12% to €3.76 billion, also slightly below estimates. ■

Ciba Q3 Profit Falls Third-quarter net profit at Swiss specialty chemicals company Ciba, which is being taken over by BASF, fell 9% to CHF46 million, hit by slowing demand but beating forecasts. Ciba cut its full-year forecast, saying demand was slowing in Europe and the U.S. and anticipating a spill over into Asia. BASF said it had secured 68.1% of Ciba's shares, clearing the key hurdle in its bid. BASF plans to delist the Swiss company's shares. According to Ciba, the BASF deal is expected to close in the first quarter of 2009. Ciba has been hit hard by high oil and raw materials costs as well as competition from Asia and had long been the subject of takeover rumors. ■

Novozymes Raises Forecast Novozymes reported nine-month 2008 sales and operating profit in line with expectations and raised its full-year outlook. Operating profit rose 6% to DKK1.1 billion ($192.9 million), while sales increased 9%. The company said it expected to see its highest annual sales growth ever this year. ■

Neste Oil Profit Increased Finnish oil refining and marketing company Neste Oil reported that in the 3Q of 2008 comparable operating profit increased to €199 million compared to €159 million in 3Q of 2007. High oil prices boosted Neste Oil's sales to €4.521 million in the 3Q, representing a 52% increase compared to the same period in 2007. ■

Biomerieux Keeps Targets French healthcare diagnostics group Biomerieux posted a 4.3% rise in 3Q sales driven by its main European market and a recovery in North America, and maintained its 2008 financial targets. Third-quarter sales rose to €271 million and were up 6.9% on a like for like basis. Sales in the Europe, Middle East and Africa region, which account for 61% of the total, increased 7.3% or 5.5% like-for-like, as booming demand in Germany, Spain and Portugal offset limited growth in France. In North America sales fell nearly 5% but were up 5.4% like-for-like – both better than in the two previous quarters. ■

Nova Reports Flat Quarterly Results Nova Chemicals reported a flat quarterly profit as a strong performance from its polyethylene division was offset by weak showings from its other key units. Nova, a major maker of ethylene, polyethylene and styrene, said it earned $98 million, or $1.18 a share, up from year-earlier $97 million, or $1.16 a share. ■

Wacker Chemie's Q3 Profit Up Wacker Chemie reported a 21% rise in 3Q core profits thanks largely to its polysilicon business for use in the solar industry. The company said earnings before interest, tax, depreciation and amortization (Ebitda) rose to €327.5 million. Its core profit margin was stable at 28.3%. Unlike many chemical companies that have lowered their earnings expectations, Wacker Chemie maintained its outlook, and said it still expected 2008 sales to rise well over 10% and core profit to continue its upward trend. For the 4Q Wacker said it expected seasonal and demand-related factors to lead to a weaker business, but its polysilicon unit would continue to show strong performance. Wacker's polysilicon division, which supplies wafer and solar cell companies with polycrystalline silicon, recorded the largest jump in earnings among Wacker's divisions thanks to strong demand for green energy. ■

DSM Reports Strong Q3 DSM's operating profit from continuing operations in Q3 (€267 million) was only slightly below the result in the 2Q, which was DSM's best ever quarter, and 27% better than the comparable quarter in last year. Net sales from DSM's continuing operations increased by 9% in the 3Q. Organic sales growth continued to be very strong at 12%, where price management prevailed over volume. The operating profit from continuing operations amounted to €267 million, an increase of 27% on the comparative period last year. ■

Sartorius Reports Nine-Month Figures Sartorius announced its results of the first nine months for the current fiscal year, the Group earned sales revenue of €453.4 million. This corresponds to a currency-adjusted gain of 2.8%. Order intake at a currency-adjusted €454 million is slightly above last year's level. Despite this restrained growth overall and the unfavorable currency effects, Sartorius's profitability continues to remain at a robust level. Nine-month operating earnings, reported as Ebitda are at €40.6 million relative to €46.9 million a year ago. The corresponding Ebitda margin is 8.9%. ■

Air Liquide Maintains Targets Air Liquide warned recently that global financial turmoil made it hard to predict 4Q business but maintained its financial goals as calls to clean up the environment would sustain hydrogen demand. The company is among the first to report quarterly performance in a sector which many see as a safe-haven investment due its traditionally steady growth but which may also suffer from the world financial crisis. Third-quarter sales, boosted chiefly by hydrogen demand, rose 10.4% to €3.247 billion and were up 7.6% excluding the impact of natural gas prices, exchange rate fluctuations and takeovers. ■

Mixing Chemicals

The Impact of the Reach Regulation on Formulators

Up & Down the Supply Chain – Reach, the new European chemicals legislation, will not only impact the companies that produce or import chemicals, but it will also have an impact on the downstream users (DUs) of chemicals like formulators. Communication of the Reach information – that is generated by manufacturers and importers on the safe handling of substances – is required throughout the supply chain. A simple and robust mechanism is needed to aid DUs, especially formulators, to develop suitable exposure scenarios (ES) for their products, which are most likely to be preparations, and which must recognize their customers' end uses. This information needs to be consistent with the information being supplied by manufacturers and importers for their component substances.

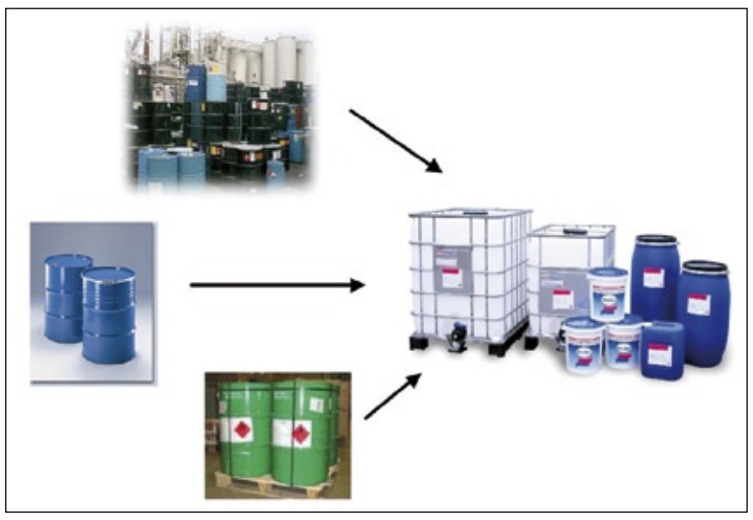

Fig. 1: Formulators offer a large variety of products mostly tailored for specific applications.

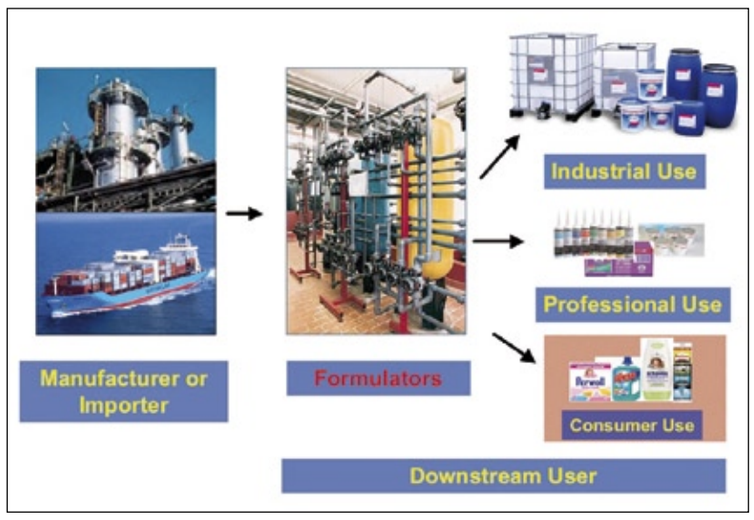

Fig. 2: Roles in the supply chain

From the definition, formulators are DUs, who produce preparations, that means they make a mixture or solution composed of two or more chemical substances. They market a large variety of products, which are mostly tailored for specific applications. The recipes are highly confidential because they assure the market position of the formulator. If a chemical reaction occurs during the preparation and a new substance is generated, the formulator also has the role of manufacturer.

Formulators are in the middle of the supply chain. They buy chemicals – pure or mixed – and produce preparations which they market for the use of other DUs in the supply chain, and ultimately to the consumer.

Communication Up the Supply Chain

As under Reach all phase-in-substances have to be registered, formulators have to make sure that by Dec. 1 the chemicals they use have been pre-registered by the manufacturer or the importer from whom they purchase. It is recommended that formulators ask their suppliers if they plan to pre-register or register the raw materials by themselves or – if the supplier is located outside the EU – by an "Only Representative" as soon as possible. If the raw material is a preparation by itself, each substance in that preparation needs to be pre-registered or registered if the total amount of the substance exceeds one t/y per legal entity.

The majority of the formulators' suppliers within the EU are also located inside the EU. Those suppliers will in all probability pre-register the chemical substances they deliver. Formulators should ask the suppliers to confirm pre-registration. If suppliers outside the EU do not plan the pre-registration, the formulator can act as importer and has to pre-register the substances. In such cases, the formulator needs the exact composition of the raw materials

During the registration process, formulators must check that their uses, any processing, formulation, consumption, storage, treatment, filling into containers, transfer from one container to another, mixing or production of an article or any other utilization, are covered in the registration dossier of the substance. Without spending too much time and resources, they must be able to check whether their customers' uses comply with the suppliers' ES. Formulators, like all other DUs, have to apply risk management measures (RMM) in their own production and check compliance with ES.

Communication Down the Supply Chain

The requirements on the amount of data communicated down the supply chain depend on whether or not the preparation is hazardous. For non-hazardous preparations that are put on the market, in general no specific actions are necessary. However, if they contain >1 % w/w of a substance posing human or environmental hazards, or >0.1 % of a substance on the candidate list for substances of very high concern (SVHCs) or a substance for which there is a community workplace exposure limit, formulators must give additional information on appropriate risk management measures. This information will especially need to be provided for substances subject to authorization, when this list has been developed. Putting a hazardous preparation on the market will increase the burden, because an extended safety data sheet (SDS) will have to be made for the new preparation.

Relating to the registration process, formulators must make sure that the use and RMM of the preparation by their customers in industrial or professional activities is covered by the registration dossier. They must forward information on use and RMM down the supply chain and inform consumers to enable safe use of the preparations. In addition, communicating use and RMM for substances in preparations must not breach the confidentiality of the recipes. Thus, formulators do not only need resource-efficient and easy-to-use solutions for dealing with their specific challenge of communicating uses, but they also need a way of communicating their data that allows them to keep the recipe confidential. According to existing technical guidance documents, the main tool for communication down the supply chain will be the SDS including an annex with identified uses related RMM.

The top-down approach based on the manufacturer's, importer's or formulator's knowledge of its supply chain is the most efficient way of ensuring effective communication and keeping the administrative burden on all actors to a minimum. The proposed process with the recommended top-down approach envisages at least three phases of information gathering involving interactive communication between the actors in the supply chain.

It is assumed that the manufacturers, importers or formulators know most of the uses of their substances (preparations). Therefore, the first step is an in-house review of existing information to produce a tentative ES for all known uses. If there is insufficient information, key customers can be approached for additional information required to prepare the tentative exposure scenario. In order to avoid a flood of questionnaires up and down the supply chain, it is proposed that the main communication will take place following a top-down philosophy. Manufacturers, importers or formulators will communicate their tentative ES to key customers or trade associations and get into a dialogue with them in order to refine the content and to ensure maximum coverage in terms of number of uses and appropriateness recommended. The result of this dialogue will be a draft ES that can be communicated further in the supply chain to alert DUs to those identified uses that will be supported at registration. DUs are requested to check whether their uses are covered and to review appropriateness of the use description and RMM recommended. Silence means confirmation.

Exposure Scenario

The challenge for DUs will arise from complex formulations, since identified uses and ES are linked to substances. Formulators have to compile a new SDS which, based on substances' ES, provides a single ES for their preparation with the necessary RMM translated into language readable by a user not skilled in chemicals.

Another big challenge in this communication down the supply chain is the necessary degree of detail: If the ES in the annex of the SDS becomes too detailed, registrants will have to include a large number of ES in the chemical safety report and their customers have then to select from these ES the one appropriate to them. The other option will be based on broad and generic ES and the formulators will then merge the ES of all relevant substances to one single ES for the preparation adapted to the specific use of this preparation. To simplify this step, formulators will follow the critical-component approach, where only the most risky substances (depending on hazard, concentration and availability) are assessed. The six assessment criteria are, for human exposure, oral, dermal and inhalation, and for environmental exposure, emission into surface water, air, and soil. It is assumed that RMMs written for the most dangerous substances will then cover the less risky ones.

Disappearance of Substances from the Market

Because of the costs of Reach – mainly for testing – it is expected that up to 8–10 % of the substances currently on the market could be withdrawn. A substance needs to be withdrawn at the supplier or formulator level, if for reasons linked to the implementation of Reach, high re-engineering or re-qualification efforts along the entire value chain will probably be the result. All this cost will lead to a price increase of chemical substances and preparations.

The Formulators' Future

The Reach legislation will bring a lot of additional work for formulators: in communication with suppliers, in compiling more-detailed SDS, in communication with customers and in compliance checking of substances. It is important that formulators have ensured that by Dec. 1, the chemicals they use in their preparations are pre-registered or registered. In the case that the formulator is the importer, or if during the production of the preparation a chemical reaction occurs and a new substance is manufactured, it is the formulator who must pre-register/register the substance.

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Reach And IT

What Challenges Does the Industry Face?

Implementation – The European chemicals regulation Reach has been in force for a year. After a phase of preparation for the industry, the implementation has now finally started. Due to its highly networked structure and its widely diverse product portfolio, BASF is one of the parties most affected by Reach.

This is due not only to its role as a manufacturer and importer of chemicals but also as a user of chemicals. Thus in different roles, BASF must ensure that the substances it uses meet all legal requirements. Together with its customers and suppliers, BASF is faced with the task of identifying the relevant uses of substances and products, describing their safe handling as well as developing measures to manage risk.

First Steps Under Reach

At the beginning, the company decided to pre-register all the substances it manufactures in Europe or imports into Europe. This means that for BASF alone, several thousand substances need to be registered. In order to increase efficiency in this process, the company is checking which of its substances will also have to be registered by other companies so that joint solutions can be worked out wherever possible.

In the implementation of Reach, BASF has to fulfill a number of requirements. It must ensure that:

- the raw material suppliers receive sufficient information for the safety assessments of how BASF uses their products;
- the risk management measures stipulated by the supplier in the safety data sheet are implemented;
- in the case of BASF products being classified as hazardous, information is passed on to suppliers or customers; and
- an assessment of the use of BASF products is made and risk management measures derived from this are specified in the safety data sheet (SDS).

The variety of tasks and the large number of substances to be registered make it clear that hardly any other company is going to be as profoundly affected by Reach in the coming years.

Efficient IT Solutions Can Facilitate Reach Implementation

An important cornerstone to achieve the requirements is the efficient use of IT solutions in the process. For the collection and exchange of data under Reach and also for the preparation of technical dossiers Iuclid 5 is the key tool. It collects information about the substance identity, its preparation and its uses, same as robust study summaries and the physicochemical, toxicological and ecotoxicological endpoints. The dossier is a compilation of all these data and can be exported as an XML file electronically to the Reach IT system of the European Chemicals Agency (ECHA). Iuclid 5 also allows for the exchange of data between companies (data sharing, consortia).

Iuclid 5 plays a central role in the IT landscape of all organizations, which have to provide data under Reach or for other purposes e.g. OECD HPV, biocides etc. It was initiated by the European Chemicals Bureau (ECB) and is distributed free of charge by the ECB.

Due to major changes in the data model as compared to its predecessor Iuclid 4, the migration of numerous already existing data-sets into the new structure posed a major challenge for BASF. The migration was nevertheless completed in the fourth quarter of 2007.

In addition to Iuclid 5, every company uses supplementary IT solutions internally to fulfill the legal requirements e.g. for hazard communication (e.g. for SDS). Under Reach a new format for SDS, called extended safety data sheet, will be used. Additional new requirements for the extended safety data sheets under Reach are e.g. the delivery of exposure scenarios which reflect the safe use of a substance according to its application by a downstream user. Based on the identified uses for a substance as collected from the customers (e.g. spray application for industrial use), experts in the product safety department evaluate exposure scenarios. IT solutions need to support this task by delivering the content in the required format. However, they highly depend on the efficient implementation of organizational structures to create the necessary data.

It has to be ensured that the information delivered to the customers via the new extended safety data sheets is synchronized with the data delivered in the Reach dossiers. Taking into account the huge number of additional new data for BASF it is essential to achieve utmost efficiency in this process through electronic interfaces between the existing IT systems and Iuclid 5.

As data models of IT applications can largely differ from each other, the major challenge is to achieve a mapping to the Iuclid 5 data structure. The close cooperation between the IT department and the experts from product safety is a key factor for success.

Ensure Efficient Communication with other Companies

Also the exchange of data with other members of the SIEF (Substance Information Exchange Forum) requires efficient solutions. Information protection and an efficient access to relevant information by the affected parties are of special importance.

The SIEF management system is based on an initiative by the European Chemical Industry Council (Cefic). It is strongly supported by the industry and targets an efficient and consistent Reach registration process in the chemical industry. It allows e.g. exchanging information via email and sharing text files. The SIEF management system will have an access rights concept to ensure data protection for all involved parties.

SIEF are formed after the definition of substance identities and require companies to collaborate until June 2018 according to the Reach process. An IT tool available during the whole period is therefore highly beneficial to simplify the data management. The assignment to a SIEF in the SIEF management tool is based on the contact data of the affected companies, which is derived from Reach IT and substance identifiers like European Inventory of Existing Commercial Chemical Substances (Einecs).

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Reach And Chemical Leasing

Two Concepts and Their Synergies

Share And Share Alike – Chemical leasing implies selling chemical services (coating, greasing, cooling, cleaning, etc.) instead of products and makes use of the new processes established by Reach. Chemical leasing is eco-efficient by nature, thus turning these processes into economic advantages while catalyzing Reach compliance at the same time.

In a chemical leasing business model, the supplier is paid for the service provided for the chemicals – not for the amount of chemicals provided. The supplier thus becomes a service provider interested in keeping costs low.

The inherent economic incentive to optimize product efficiency coupled with enhanced know-how sharing and transparent information flow across the supply chain makes chemical leasing a tool to implement best practice product stewardship and risk management over the chemical product's life-cycle.

It is this intrinsic capability that makes chemical leasing perfectly aligned with the Reach objectives. With the new conditions and circumstances the Reach system will establish, the conventional paradigm that chemicals are just sold by one side and purchased by the other without any further exchange of information, can not survive. The OECD conference in Vienna in November 2003 entitled "Experiences and Perspectives of Service-oriented Strategies in the Chemicals Industry and Related Areas" concluded: "All these new service-oriented chemical business models require a close cooperation between the provider and the user of the chemical. Therefore, the potential of these business models has also to be seen in connection with the new EU Chemicals Policy (Reach), which will require a new relationship between provider and user and the conventional paradigm 'supplier here – customer there' will hardly be crowned with commercial success."

Along the supply chain, Reach is going to call for information exchange, monitoring procedures, patterns for sharing and cooperation as well as documentation and assessment procedures. Recital 17 of the Reach regulation reads as follows:

"All available and relevant information on substances on their own, in preparations and in articles should be collected to assist in identifying hazardous properties, and recommendations about risk management measures should systematically be conveyed through supply chains, as reasonably necessary, to prevent adverse effects on human health and the environment. In addition, communication of technical advice to support risk management should be encouraged in the supply chain, where appropriate."

On the one hand, the supplier will have to document hazards of chemicals as well as risks occurring during their use and application. On the other hand, the user, will be challenged use the experiences gained during the handling and use of the chemicals available to his partners and to the system itself. These new obligations will require a new culture in terms of information exchange, communication and cooperation.

Reach and Chemical Leasing Share the Same Philosophy

Both approaches are mutually supportive, as they both stimulate the development of rules for sharing. With Reach, costs of tests will have to be shared among companies registering the same substance. Companies will have to share responsibility for the documentation of the properties of a chemical substance as well as for the risks that might occur during its application. Also a great deal of information will have to be shared between companies representing various stages of the supply chain as applicants depend on up-stream documentation to be able to fulfill their obligation to document risks and applicable risk reduction measures for their specific use. This culture of sharing, which might be a new element in the relationship of business partners, is also a prerequisite for success in service-oriented business models, as they equivalently depend on a high degree of openness and trust between the partners involved.

The agreement also requires mechanisms and procedures clarifying responsibility and liability patterns with regard to the performance and quality of their common business activity applying chemical leasing. Both instruments involve different stages of the supply chain – as producers and applicants are challenged – and both approaches are life cycle oriented either through their documentation requirements addressing phases of production, use or disposal; or through their integration of the corresponding partners managing those life cycle stages within the business model.

A Delicate Balance

Chemical leasing is the tool to demonstrate "adequate control", a set of parameters which have to be fulfilled in order to qualify for a use to become authorized. As outlined above, only chemicals of very high concern will have to be registered under Reach; chemical leasing should not be used as a means to prolong the use of such extremely hazardous substances. However, experience shows that chemicals can be managed excellently with chemical leasing applications. In the case of applications that use chemicals of very high concern, adequate control will be achieved as an inherent principle within service-oriented business models. That connection shows a need to assure that also within chemical leasing applications the substitution of extremely hazardous substances by alternatives is an underlying principle.

The Key Role of Information Flows

Chemical leasing is the ideal business environment to identify and apply the use and exposure category/scenario concept in particular within the chemical safety report – joint by suppliers and users. Specifying the relevant use and exposure category within the Reach system together with qualifying the risks possibly arising will build upon the assessment already performed during the establishment of the specific chemical leasing model. Also, the development and application of appropriate risk management measures will be part of that process which therefore will highly likely render the core elements necessary to apply the exposure category concept within Reach.

It is up to the companies implementing Reach to make sure that this intensive form of cooperation will mobilize synergy effects, which – contrary to prevailing apprehensions – will give Europe a pronounced edge as a location for the chemicals industry. Recent experiences show that this window of opportunity is not confined by the EU's borders.

Knowledge about the chemicals' properties and communication about the risks that might arise during their application are the pillars for the new attitude required for chemical business. The Reach system has the potential to intensify cooperation exchange of experiences. The information generated within the Reach system can be the basis for the know-how development in service-oriented strategies. The future belongs to business models that entail an intensive dialogue, cooperation and the bundling of creative potentials – and here chemical leasing – plays a key role It opens a window of opportunities for turning new obligations, responsibilities and flows of information into successful business strategies.

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Lean And Fit

Ciba takes lean engineering seriously and nowhere more so than at its UK factory in Bradford where it manufactures its world leading range of chemicals for the water treatment and paper industries. The company's policy of continuous improvement and waste minimization led them to invest in an Elga Process Water reverse osmosis system. The factory has an on-site borehole and was using about 70 % of the licensed abstraction rate for tower make-up and washdown. However, the quality was not suitable for feeding the combined heat and power (CHP) plant boiler make-up deioniser which had to be supplied with mains water. Project Engineer Jeremy Kennett explained: "We wanted to maximize the utilization of the borehole water supply, so we discussed with Elga Process Water about pre-treating it so that we could feed it to the deioniser. They had supplied the deioniser so we knew and trusted their engineers, and they came up with a solution that would give us a two year payback." The treatment system supplied by Elga Process Water included sand filters, organic scavengers and a MegaRO. It has allowed Ciba to replace most of its mains water usage with treated borehole water, which has lower total dissolved solids (TDS) than the mains water and that means lower operating costs on the deioniser. "The project went really well," said Jeremy, "and we now use almost all of our borehole abstraction license capacity. With the deionization savings, our projected cost targets will be more than met."

▶ www.elgaprocesswater.co.uk

Increased Energy Efficiency

New technology from Dow Corning is helping homeowners and businesses save energy by replacing traditional gaskets and metal inserts that hold window glass into frames with silicone sealants. The sealants allow window manufacturers to create larger, more efficient windows that provide better thermal insulation and let in more daylight, which reduces the need for artificial lighting. The new technology is receiving high marks from independent rating organizations.

▶ www.dow.com

Shed a Light on Reach

Ten Things U.S. Companies Should Know about Reach

Resolve Doubts – Companies based in the U.S. are largely unaware of the requirements of the EU. Especially for downstream users (not chemical manufacturers), this responsibility can be a mystery, or at best, a labyrinth of regulations that is difficult to understand. Here are some highlights of some of the basic premises of Reach that are relevant:

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1 Reach affects U.S. companies who may be in the business of making products in addition to those manufacturing or marketing chemicals (substances). Anyone doing business in the EU is potentially affected by Reach. Chemical companies are rapidly discovering that Reach compliance has great significance to their businesses in any case. Companies, who purchase substances to make preparations, or to use in articles, are already specifying evidence of Reach compliance or intended compliance program.

2 Reach is simple in its theory. It is important to always remember that Reach simply translates to chemical registration. The commission is passing the responsibility of proving the level of chemical safety from government to industry. The burden of proof lies with industry; and the European chemicals agency (ECHA) is responsible for reviewing the data.

3 Reach will not implode. Due to its complexity, some believe that Reach will not come to pass. In fact, Reach came into effect on Jun. 1, 2007. The dates of implementation are scheduled through 2018 and these legally specified dates have not changed, and there are no plans to change those dates. The philosophy behind Reach is here to stay in the worldwide market. It is likely that Reach will even be recognized in other countries after implementation.

4 Reach non-compliance can pull products off the shelf and risk putting a company out of business. Any substance that is not registered or pre-registered appropriately is illegal. The substance or product containing it may be pulled from the market, whether in transit or on a retail shelf. If the substance is contained in a preparation (shampoo, household cleaning products and similar), the preparation can be removed from the market, and not allowed to be sold if and when the substance is registered. Any substance that is not registered is considered to be unproven as a safe chemical. There are serious ramifications for all those involved in non-compliance. Certainly for a chemical supplier, this would result in an immediate loss of business, e.g. by losing market share to a competitor who has registered its substance. There may be cases where suppliers consciously choose not to register or pre-register their substance. This may be a situation which includes a small company who does not believe that the effort and the cost of its responsibilities are worthwhile to continue the business of sales destined for the EU It may be unaware that Reach allows for data sharing at a fair price if necessary. The company should also know that there is an arbitration process by which any stalemate may be settled.

5 U.S. companies need formal, technical representation in the EU to comply with Reach. According to EU law, a legal or natural person established outside the EU whose substances are subject to Reach may appoint a natural or legal person established in the community. his entity fulfills the obligations of an importer, whether or not the substance is physically receive or distributed. This scenario is somewhat foreign (no pun intended) to most companies in the U.S., however in some ways it is not unlike choosing a distributor for products, except that the Reach only representative (OR) must have technical knowledge. The OR is the person legally responsible for registration (including pre-registration) and hazard communication, including safety data sheets (SDS). It is foreseen that the OR would also represent the company at any Sief (Substance Information Exchange forum) or groups that meet to share data.

6 Reach is a state of mind that will influence the chemical and products industry for many years to come. The concept of communication through a SDS is a concept that is new. This requires cooperation both up and down the supply chain.

7 Reach is greatly affected by non-governmental organizations (NGOs). It is a program that tries to allay concerns of NGOs. Much time has been spent discussing the minimization of animal testing. In fact, there is a separate part of the regulation that discusses this. Ultimately, the goal of NGOs is to have all dangerous chemicals to be banned. The definition of dangerous does not necessarily match the definition recognized in the law, or in industry. There are numerous consortia of consumer organizations: primarily Greenpeace and the WWF, as well as the European environmental bureau and others. These organizations have been active in creating new legislation targeted at consumer products and also the environment. They sent a pointed letter to European commissioners Stavros Dimas and Günter Verheugen stating that "Reach has flaws and loopholes and is vulnerable to further weakening in the future." The letter was then closed by stating, "We will continue to closely monitor the forthcoming Reach implementation process, the legislative reviews as well as the Agency itself." It is clear that Reach will be as closely monitored by NGOs as it will be by industry.

8 Reach is not just theory. It's fact, and it's not new. Clearly there are over 800 pages that make this a tangible regulation. Unlike directives, regulations take immediate effect on the prescribed date. On Jun. 1, 2007, the regulation was sent into motion and the rolling deadlines began. Reach is not entirely new. Previously, chemical registration was required under the European inventory of existing commercial chemical substances (EINECS)/European list of notified chemical substances (ELINCS) system. SDS, known as material safety data sheets in the U.S, have previously been required, though Reach brings some small but noticeable changes for more specific usage information to be exchanged up and down the supply chain. A company who already has a compliant SDS has minimal work to do. Exempt materials are very similar. These include plant protection products, finished pharmaceuticals, cosmetic finished products and food additives. Smaller quantities of substances are defined somewhat differently under Reach: Quantities of 10 to 100 kg are exempt under Reach, whereas under previous requirements a notification was required, although with reduced document requirements. Quantities from one to 10 mt have reduced submission data requirements, whereas previously they required full notification. Over 10 mt amounts require a full registration under Reach, and under the previous system a full submission including test reports was required. In this case, the information needed positive acceptance by the competent authority in the appropriate member state, and in Reach if no response has been received in three weeks, it is implied that the registration has been accepted. The requirement for a responsible party in the EU (now known as the OR described in item four above) in theory has not changed. The analogous term in the previous system was "sole representatives", and this fulfilled the requirement for a legal representative. There are many other similarities in the spirit of both the old, and the new Reach system. It is important to remember that the focus is to have knowledge and information about the characteristics and use of chemicals in the EU It's as simple as that.

9 Small and medium sized companies (SMEs) have to be concerned about Reach. As long as one mt or more of a chemical is manufactured or imported (with outlined exceptions in the regulation), a registration must be submitted to ECHA as outlined in the regulation. SMEs are understood to have special challenges under Reach. However, there are no exemptions for SMEs within the regulation. All of the provisions apply to companies large and small.

10 The commonly applicable parts are much less than 1,000 pages for a substance. The trick is to find those that apply to a specific situation. There is no known situation or substance that involves all of the detail in the entire regulation. All chemicals are either required to be registered, or are exempt, so there will always be a part of the regulation that applies, even if only as an exemption. In the best case, the substance is noted as exempt and is the only portion of the regulation that applies to it. In the most onerous case of a highly regulated substance.

Conclusion

The Reach approach to the registration of chemicals and the categorization of their properties will be with us in perpetuity. The wisest companies in business are in compliance or have well defined plans to do so. Other companies must do the same, or will be left behind, perhaps permanently.

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Cognis Affiliate LS Extends Site in France

Laboratoires Sérobiologiques (LS), the active ingredients business of Cognis Care Chemicals, has begun to enhance its production site in Pulnoy, France. With this step, LS wants to further establish its site in France as a technology center for the research, development, and production of high-performance active ingredients. The project represents an investment of more than seven million euros, and should be completed in 2010. It will enable global specialty chemicals supplier Cognis and its customers to better meet the market requirements of the future. A major factor in the decision to invest in the Pulnoy site is the increasing demand for high-performing active ingredients for the cosmetics market. ■

SIEFreach: A Unique Service

Cefic, representing the European Chemical Industry together with five national associations has put in place a service which shall facilitate and ease the exchange of information between companies with the final goal of submitting the registration dossiers as foreseen by the Reach Regulation. According to Cefic, SIEFreach is a reliable and efficient collaboration tool based on the state-of-the art solutions provided by IBM.

Cefic took the initiative to offer via the SIEFreach platform the possibility for companies to organise the exchange of information in a user-friendly manner. Through the Substance Information Exchange Forum (Sief) companies will be able to exchange test and other data on their identical chemical substances, which means that these companies will gain time and cut costs by enhancing their communication through a structured channel. Another important outcome will be that animal testing can be minimised.

Reachlink makes available a European Sief management IT system to all European chemical and related other companies impacted by Reach, as from Aug. 21. The SIEFreach solution, consisting of the SIEFreach application and portal is designed, developed and maintained by an IBM team. The IT platform is based on IBM Websphere and Lotus collaboration software and is hosted by IBM. On top of the hosting, IBM will also provide the application helpdesk for the end user.

Alain Perroy, Director General of Cefic, explains why they chose to partner with IBM: "Cefic and IBM provide a state-of-the-art, flexible and scalable collaboration solution fitting the specific needs of the chemical industry."

Isabelle Verleye, Associate Partner IBM Global Business Services, confirms the IBM commitment towards Reachlink: "Our global team is dedicated to making this solution a success for Reachlink and the chemical industry now and in the coming years. We have used our full equation to enable efficient collaboration for the chemical industry leading to a successful registration." ■

Altana Shareholder 63 %

Altanas largest investor has lifted her stake in the German specialty chemicals maker to about 63 % from 50.1 %, snapping up shares ahead of the start of her public offer to buy the company. Shareholder Susanne Klatten bought a total of 18.6 million shares at an average price of €12.92 on Nov. 6 and 7, according to statements issued. She spent a total of €241 million on the shares. Klatten, Germany's wealthiest woman, said she planned to buy the 49.9 % in Altana she did not already own and delist the company in a deal worth €910 million. Through her investment vehicle Skion, Klatten offered remaining shareholders €13 per share, a 38 % premium over the previous day's closing price. ■

EP Environment Committee Voting on ETS

The European chlor-alkali industry said it was disappointed by the outcome of the the EP-ENVI Committee voting on the emissions trading scheme (ETS). Industry groups said if the industry is not allocated free CO_2-allowances, its competitiveness on global markets and therefore its overall future will be endangered. As a highly electricity intensive industry, the chlor-alkali sector is exposed to a significant risk of carbon leakage.

"If in Europe, our sector had to absorb the extra carbon costs passed on by the power producers, the sector would be forced to consider new investments elsewhere," said Alistair Steel, executive director of Euro Chlor, a Brussels-based organisation representing the European chlor-alkali industry.

The chlor-alkali industry finds itself in a particular situation, because as an electricity consumer it is not a direct emitter of CO_2. With electricity accounting for about 50 % of production costs, it is an electricity intensive industry whereby the CO_2 is emitted by the power generator. This makes the sector particularly vulnerable to higher electricity prices and as such there is an urgent need that the legal proposal is amended. In addition, in order to develop mid- and long-term investment schemes, the sector needs certainty on the criteria to determine which sectors are exposed to international competition and may inevitably be subject to "carbon leakage." ■

Merck Extends Alliance with Nano-Terra Merck announced the extension of its existing strategic alliance with Nano-Terra, a nanotechnology co-development company.

The original agreement between the companies, announced in February 2007, was to develop innovative, nanotechnology-based products and solutions based on Merck's materials. After successfully meeting initial development milestones, this new agreement will focus on specific application development for Merck customers and moving the technical capabilities into the marketplace for commercialization. Under the new agreement, which extends the partnership through 2011, Nano-Terra will develop novel application techniques for existing Merck materials which are designed to address market opportunities where smaller (micron and nano-meter) feature sizes are required for certain printable electronics components. The Merck fabrication processes will be based on Nano-Terra's proprietary soft lithography technology, invented and pioneered by Professor George Whitesides of Harvard University, a co-founder of Nano-Terra, and the partners will share commercialization rights on a global basis. Terms of the agreement were not disclosed. ■

China National Chemical, Blackstone Launch JV China National Chemical Corp (Chem China) announced that China Bluestar Group, its joint venture in Beijing with the Blackstone Group, has been launched officially. Bluestar, one of Chem China's subsidiaries, will be transformed into a Sino-foreign joint venture. U.S.-based Blackstone is investing $600 million in the project for a 20% stake in the new company. Chem China and Blackstone signed a cooperation agreement in September 2007. It was approved by the government in December. Bluestar, which is mainly engaged in new chemical materials production, has three units listed on the Shanghai and Shenzhen exchanges. ■

BASF Coatings Paints And Services For Belarus BASF Coatings has signed a distribution agreement with Belarusian importer and dealer Sagbel. The Minsk-based company will sell BASF Coatings paints, such as cathodic e-coats and liquid coatings, in Belarus.

The cooperation will focus on supplying the automotive industry and its suppliers. The agreement also provides for market probes, researching and examining bids, as well as post-delivery technical service at the customers' sites. The basecoats can be supplied from the new BASF Coatings' production site in Pavloski Posad, Russia. ■

Lanxess and Cheng Shin Rubber Sign Agreement The Performance Butadiene Rubbers business unit of specialty chemicals group Lanxess and the Taiwanese tire manufacturer Cheng Shin Rubber have put their cooperation on a firm footing with the conclusion of a long-term supply agreement. In the next four years Lanxess will supply solution SBR and polybutadiene rubber to Cheng Shin. The plan is to nearly double the volume of high-performance rubber that Lanxess supplies over this period. Up until 2012 Cheng Shin aims to spend $300 million every year to expand its production facilities in China, Thailand and Vietnam. ■

Pfizer and UCB Form JV Pfizer and Belgian drug maker UCB have formed a joint venture company, with investment from the British government, to develop technologies that automate and speed up the drug development process. The British government's Technology Strategy Board helped facilitate the formation of the new company, Cyclofluidic, the companies said in a joint statement. Pfizer and UCB will each have a seat and scientific observer rights on Cyclofluidic's board. The new company, which will collaborate with academics and component manufacturers, will also provide training for both flow chemistry and biology scientists at its facility, which will be located in the south of England, the companies said. ■

Reach: ECHA Underestimated Number of Pre-registrations

The Chemical Business Association (CBA) issued a plea for the European Parliament to take urgent action to extend pre-registration because of the failure of the European Chemicals Agency's (ECHA) Reach IT system.

Melvyn Whyte, Chairman of CBA's Reach Task Force, said: "Industry is trying its best to comply with Reach and is being prevented from doing so by inadequate technology which has completely failed to cope with the demands placed upon it and is effectively preventing companies from pre-registering substances ... It is now obvious that ECHA seriously underestimated the number of pre-registrations. It initially expected around 200,000, but by Nov. 10, the actual figure stood at more than one million, with a final figure likely to exceed two million by the end of the pre-registration period. Industry's key concern is that companies will be forced to remove substances from the market – with major knock-on effects for the chemical supply chain."

CBA has consistently drawn attention to the potential consequences of these problems which have now become widely recognized. CBA is aware of specialist personnel in many companies working evenings and nights in an attempt to gain access to Reach IT outside normal working hours.

On Nov. 10, ECHA announced that a new version of Reach IT had been installed which it claimed would dramatically improve the rate of pre-registrations. ECHA said that Reach IT was currently processing between 20,000 and 50,000 pre-registrations daily adding that ECHA is aware that companies are trying hard to pre-register their substances.

Melvyn Whyte said: "ECHA is desperately trying to fulfill its statutory duties under Reach. But why should industry have any more confidence in this new version of Reach IT as it had in any of its predecessors? The key point is that Reach IT clearly has major capacity problems. There will inevitably be companies which, despite making every endeavor to complete the pre-registration process, will fail to make the Nov. 30 deadline. They will suffer commercial and financial loss simply because of the inadequacy of Reach IT."

In October, CBA called for a six week extension to pre-registration. This proposal aimed to give ECHA more time to get Reach IT operating effectively. It also aimed to compensate industry for the fact that the bulk pre-registrations process – which has accounted for 70% of all pre-registrations so far – was six weeks late in becoming available, thus reducing the planned six-month pre-registration period by almost 25%.

"Urgent action at political level within the European Parliament is essential in order to minimize collateral damage. In economic terms, the consequences of products being removed from the market will deepen the recession. In regulatory terms, the failure of Reach IT is likely to bring the Reach legislation into disrepute. In legal terms, companies may seek redress for consequences of the failure of Reach IT. And, in political terms, the European Union will have fallen well short of its objective of being the global standard-bearer for the effective regulation of chemicals," said Melvyn Whyte.

► www.chemical.org.uk

Thai Bonds Worth $286 Million

PTT Chemical (PTTCH), Thailand's largest olefins maker, said it had set the coupons on bonds worth up to 10 billion baht ($286 million) that it plans to sell next month. The five-year bonds would offer a coupon of 5.30% in the first three years and a 6.0% coupon for the fourth and fifth years, the firm said in a statement. The seven-year tranche would carry a coupon of 5.30% in the first three years, and 6.0% for the fourth and fifth years, while the sixth and seventh years would have a coupon of 6.45%. The unsecured bonds, rated "A+(tha)" by Thailand's Fitch Rating, would be offered to investors between Dec. 1 and 3. Bangkok Bank, Kasikornbank, Krung Thai Bank and Siam Commercial Bank, TMB Bank and Tisco Securities are the underwriters. PTTCH, a flagship in the olefins petrochemical business of top energy firm PTT PCL, has said it planned to raise 15 billion baht through domestic bond issues this year and next year to finance expansion.

► www.pttchem.com

Reach and the Aerospace Industry

Technological development that benefits the environment has been a focus of the aerospace sector for many years. For example, emissions per passenger mile have reduced by over 70% since the Boeing 707 entered service. The principles of Reach are in line with, and may accelerate, the technology programs to develop more sustainable products and methods of manufacture.

The aerospace industry is working closely together to ensure compliance while minimizing any administrative burden. A coordinated set of working groups has been established between the European and North American trade associations and their member companies. An industry implementation guide and legal interpretation annexes have been published and have been the basis of focused training seminars.

The industry is largely made up of downstream users of chemicals and, hence the prime activity during pre-registration and registration is to ensure that the manufacturing uses of our substances are registered.

However, the declaration of substances of very high concern (SVHCs) in the products causes a much bigger data analysis challenge. The aerospace industry has detailed knowledge of material specifications but has never had to aggregate the elemental substances within an entire aircraft, for example. For manufacturers of such complex integrated articles this will require sophisticated IT solutions, although it is not clear yet how the customer of such an aircraft would use the resultant information to ensure safe use. To support the development of the IT, the industry has also created a generic business requirement specification.

In an industry where cutting edge technology is the only route to survival, combined with life cycles of up to 50 years, the overriding challenge of Reach is business continuity. It has to be ensured that the supply chain continues to deliver a safe product during the time it takes to validate an alternative. To support this, the industry has simultaneously issued North American and European standards (SAE 9536 and ASD STAN TR9536) defining all substances that have been declared with a relevant risk category. Additionally, a shorter list has been drafted defining the subset of substances, which require the greatest concerted industry focus, due to their criticality in the product. Both of these will help to identify where it is needed to focus on technology efforts to maximize environmental benefit while maintaining safe products and stable business.

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Mitsubishi to Buy Lucite for $1.6 Billion Japan's Mitsubishi Rayon said it will acquire unlisted British chemicals producer Lucite for $1.6 billion in cash, joining a growing list of Japanese companies that are snapping up overseas bargains in the global financial crisis. Mitsubishi said the acquisition would give the company production bases in the U.S. and Europe, allowing it to accelerate its expansion into emerging markets such as Russia and South America. Mitsubishi said it would complete its acquisition of Lucite shares from Charterhouse Capital, which has a 81.6% stake, and other shareholders in January subject to regulatory approval. The combined firm would have controlled 35% of the global market in 2007, according to Mitsubishi Rayon's estimates, well above the 15% held by Rohm and Haas. ■

Daiichi Sankyo Buys 63.9% Stake in Ranbaxy Daiichi Sankyo, said it had completed the takeover of India's Ranbaxy Laboratories, buying a 63.9% stake for 199.8 billion Indian rupees ($4.20 billion). Daiichi Sankyo reached an agreement with the generic drugmaker in June to buy a stake of at least 50.1% through a tender offer, the private placement of new shares and the purchase of outstanding shares from the founding family. ■

Definitive Final Result of 94.59% for Ciba Offer BASF's public tender offer to shareholders of Ciba Holding, Basel, Switzerland, is available. Up to the end of the offer period, a total of 53,376,268 Ciba shares have been tendered to BASF. Together with the 1,011,536 Ciba shares that BASF held before the publication of the pre-announcement, the 9,021,802 Ciba shares that BASF bought from the Spanish investor group Bestinver outside the public tender offer and the 1,918,547 own shares held by Ciba, this results in a participation of 65,328,153 Ciba shares. This corresponds to 94.59% of all issued Ciba shares. The transfer of shares to BASF and the payment of the offer price to Ciba shareholders will take place on the settlement date, which is expected in the first quarter of 2009. A second trading line for the tendered Ciba shares is expected to be opened on the Swiss stock exchange on Dec. 3, 2008. This will allow the shares to be traded up to the settlement date. The shares remain tendered. On the settlement date, they are automatically transferred to BASF against payment of the offer price of CHF 50.00 irrespective of the share owner on that date. ■

Pall Acquires GeneSystems Pall Corporation, a global leader in filtration, separation and purification, announced the purchase of GeneSystems, a privately held French biotechnology company. The acquisition of GeneSystems, with its patented approach to rapid microbiological detection equipment and disposables, expands Pall's Total Fluid Management (TFM) capabilities in the $1 billion biopharmaceuticals process monitoring market. The acquisition also presents Pall with new opportunities in its environmental, food and beverage and water markets. "We are excited by this acquisition and the increased opportunities it presents for our pharmaceutical, biotechnology, environmental monitoring, quality control and diagnostics programs," said Eric Krasnoff, Pall Corporation Chairman and CEO. "Customers seek better tools for rapid testing and process monitoring. GeneSystems expands our ability to provide Total Fluid Management to meet customer's raw materials, production, testing and environmental requirements. " ■

BASF to Sell Shares in PEC-Rhin BASF intends to sell its 50 % holding in PEC-Rhin. PEC-Rhin is a 50-50 joint venture between BASF and GPN. The company produces ammonia, nitric acid and fertilizers in Ottmarsheim, France. BASF's fertilizer business currently comprises production activities in Ludwigshafen (Germany), Antwerp (Belgium) and Ottmarsheim (France). The JV has a workforce of about 200 employees and in 2007 generated sales in the low three-digit million euro range. ■

Teva Purchase of Barr on Track Teva Pharmaceutical Industries said that lenders have agreed to allow Barr Pharmaceuticals unsecured credit facilities to remain in place following Teva's acquisition of Barr. The agreement will give Israel-based Teva sufficient funds to complete the proposed $7.46 billion acquisition of its smaller U.S. rival, Teva said."The combination of the amended Barr credit facilities, Teva's available cash on hand and our committed bridge financing will provide us with sufficient funds to complete the acquisition of Barr as well as support the continued growth of our business," said Eyal Desheh, Teva's CFO. The amendments to the credit facilities announced waive the lenders' right to call Barr's debt upon the change in control with regard to its acquisition. Barr's credit facilities have outstanding balances of about $1.65 billion and $292 million that mature in October 2011 and June 2013, respectively. Teva still expects the deal to close later this year. ■

Recticel Sells Unit to BASF for €38.2 Million Recticel is to sell its polyurethane specialities business for car window encapsulation to BASF for €38.2 million. The transaction will generate a net non-recurring capital gain estimated at €20 million.This capital gain will be accounted for in the 4Q but due to foreseen impairments it will have a limited impact on Recticels 2008 earnings after taxes. The deal is subject to approval by antitrust authorities. ■

Danisco to Buy AGTech for $42 Million Danisco strengthens strategic platform through acquisition of AGTech. The company said it signed an agreement to acquire AGTech products, a U.S.-based agricultural biotech company, for a total consideration of $42 million on an ev basis. It expects to complete the transaction by the end of 2008 and for the transaction to have a neutral effect on danisco's operating profit for the first financial year. ■

Production
FACILITIES · PROCESSES · TECHNOLOGIES

Production

New era of PAT for Bio-Processing

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Automation

Operational excellence

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Pharma

Mounting pressure from generic incursion

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Evonik Invests In Brazil Evonik Industries plans to build a new facility for producing the environmentally friendly bleaching and oxidation agent hydrogen peroxide (H_2O_2), which is used primarily in the production of cellulose and paper, at the Triunfo petrochemical complex near Porto Alegre, Brazil. An investment volume of some €45 million has been budgeted for the new facility. Construction is scheduled to begin in mid-2009; the facility, with an annual capacity of 40,000 mt, is to become operational in early 2011. The Triunfo site is part of a chemical park and is strategically located right in the heart of continuously developing buyer industries. The new plant will create some 25 full-time jobs. Dynamic developments in the cellulose market have prompted the investment plans Growth rates exceeding 10% a year are projected for South America and Asia in this market until 2012. ■

Arkema Doubles Capacity in Shanghai French chemical company Arkema has doubled capacity at its hydrogen peroxide plant in Wujing, Shanghai to 80,000 t/y in order to meet growing demand from Asian markets. In a statement, Arkema said the expansion raises its global hydrogen peroxide production capacity to about 400,000 t/y. The statement did not provide investment details. ■

Dow and Sabic Announce Start Up of World's Largest UNIPOL PP Train Dow and Sabic announced the start-up of the world's single largest polypropylene (PP) train. The facility is located in Al Jubail industrial city on the Persian Gulf Coast and uses UNIPOLTM Polypropylene Process Technology to manufacture homopolymers and random copolymers. Nameplate capacity is 500 thousand mt of PP resins per year. The start-up is the third facility at the IBN ZAHR-SABIC JV in Al Jubail, Saudi Arabia, to employ the UNIPOL PP Process. With this facility and another being built in Yanbu, Saudi Arabia, Sabic will have nearly 1.8 million mt of annual capacity using UNIPOL PP Process Technology. The UNIPO PP Process Technology is a gas-phase process for producing the broadest range of polypropylene resins. Its simple design is both reliable and energy efficient, requiring no equipment for handling, separating or recycling solvents. ■

Siberian Gas JVs Make Progress BASF and Russia's Gazprom officially launched natural gas production at the JV Achimgaz in Siberia. The German-Russian JV produces natural gas and condensate from the Achimov Formation in the Urengoy deposit. Together with the natural gas field Yuzhno Russkoye, which was commissioned in 2007, Achimgaz is now the second joint natural gas production project by Gazprom and BASF in Siberia. Dr. Jürgen Hambrecht, Chairman of the Board of Executive Directors of BASF, and Alexei B. Miller, CEO of OAO Gazprom, opened a valve together to launch production at the deposit, which lies about 3,500 km north-east of Moscow. The JV plans to recover up to 200 billion m^3 of natural gas and 40 million t of condensate from the Achimov Formation over a period of more than 40 years. The annual natural gas production target during the plateau phase is up to 7.5 billion m^3. ■

Wacker and Dow Corning Cooperate in China Wacker and Dow Corning officially started production in the first stage of their new pyrogenic silica and siloxane plants in Zhangjiagang, China. The new plants are key facilities of an integrated silicone manufacturing site developed by both companies to produce materials used extensively in industries including construction, beauty and personal care, power and automotives. Total investment from both companies for the site is estimated at approximately $1.2 billion.

Covering an area of one million square meters, the site located in the Jiangsu Yangtze River Chemical Industrial Park, Zhangjiagang City, Jiangsu Province, is China's largest facility of this kind and among the world's largest and most advanced integrated production complexes for silicones. The combined capacity for siloxane and pyrogenic silica is planned to be approximately 200,000 mt per year. It is expected that full operational capacity will be phased in by the end of 2010. Through their Zhangjiagang production complex, Wacker and Dow Corning intend to serve growing customer demand for silicone materials in China and throughout the Asian region. ■

Nuon Selects Honeywell for New Magnum Power Plant Honeywell announced that it has won an $11 million contract to provide process control hardware and software to Nuon's Magnum plant, a 1.300 MW combined-cycle (three units) power station under construction in Eemshaven, the Netherlands. The Nuon Magnum plant, now in its first phase of construction, can supply electricity for approximately two million homes. A second gasification phase, including carbon capture, is under development. The gasification will enable the plant to convert coal, biomass and natural gas into clean power. Carbon capture would reduce the Magnum plant's CO_2 emissions to a substantially lower footprint than traditional coal-fired power stations, especially in combination with the large scale co-firing of biomass. ■

Carbon Footprint

Improving OEE Results in Dramatic Energy Savings

Efficiency – With soaring energy prices and ambitious EU targets, it is no longer acceptable for companies to treat energy simply as a fixed cost of production. Board room discussions create a clear imperative to enhance energy efficiency in order to sustain profitability.

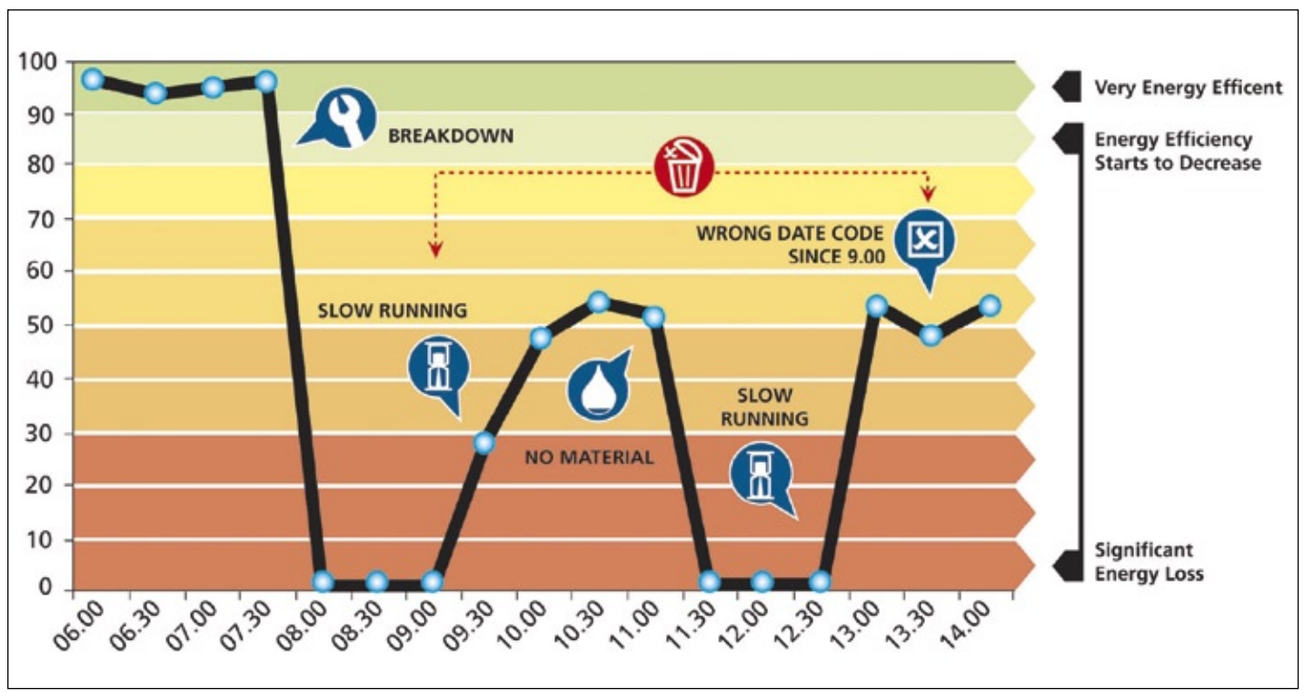

Fig.1: Slow running equipment, breakdowns and material shortages push energy efficiency into the red.

While some energy improvements can be gained by putting a number of now familiar measures in place, manufacturers are yet to reap the substantial energy savings that can be achieved by operating their factories as effectively as possible. The vast majority of companies have, at some point over the last few years, embarked on energy saving programs; switch off campaigns, off-peak production cycles and smart computer programs that turn machines off when not in use, amongst many other initiatives. While these are undoubtedly beneficial to energy consumption levels, there is a bigger prize to be won in keeping assets operating at peak condition, at top speed and at full capacity – dramatically cutting your power bill. A number of leading manufacturers found that the systematic management of overall equipment effectiveness (OEE), not only lead to increased productivity, but also resulted in a corresponding reduction in energy consumption.

Major Contributors to Wasted Energy

We could start with the example of a bottling plant; a filling machine that has a particularly 'bad-day', suffering break-downs, slow-running and frequent restarts. All the time energy is being lost, not just because the machine isn't working, but also because the bottle cleaning and sterilization, product blending, capping/corking, labeling and other associated machinery is kept idling waiting for production to resume. Furthermore, the production run will take many times longer to complete than it should; using up more energy in heating, cooling and lighting. Figure 1 illustrates the impact that a 'bad-day' might have on energy efficiency.

There are a number of these factors that are common to the production cycle and have a significant bearing on both the productivity and the energy efficiency of a production line. These factors include:

- **Breakdowns:** apart from the broken equipment, the rest of the plant continues to cycle in idle-mode
- **Start-up:** most items of plant use more energy at start up than at normal speed, so resuming production can be costly
- **Slow running equipment:** despite reduced output, the machinery uses the same level of energy as it would if running to full capacity
- **Rejects:** will waste all the energy used to create them in the first place
- **Under-utilized capacity:** it is well understood that improvements to existing plant are 10 x more effective than installing new assets

Where OEE Fits In?

OEE is a simple concept, originating from Japan along with a number of other lean manufacturing concepts, which takes a holistic view of manufacturing performance. To derive an OEE score you simply take the total availability (A) of each production line, multiply it by the performance of that line against target (P), and then further multiply the result by the quality levels achieved (Q). The resulting score indicates how well the manufacturing line, or lines are fairing against their operating potential.

"The OEE system allows the factory manager to go beyond theoretical targets to the level where a plant's true operating potential can be achieved."

When starting out with OEE, it's possible to get very hung-up and distracted by the actual OEE score. In reality the score in itself is less important than the ability to use OEE techniques to inform and drive improvements to plant and processes. A number of manufacturers may already be using spreadsheets to record and track OEE scores. Although an important place to start, spreadsheets are limited by accuracy and complexity and therefore fail to deliver on the full capability of OEE as a tool for enhancing productivity and reducing energy. Implementing an OEE system provides the rich functionality to quickly calculate, clearly report and deliver intelligent drill-down facilities to uncover previously hidden issues as a platform for continuous improvement programs. The OEE system allows the factory manager to go beyond theoretical targets to the level where a plant's true operating potential can be achieved.

What could a 1% improvement in OEE mean for energy efficiency?

Table 1 provides a simple illustration of the potential a mere 1% improvement in OEE score could make to the profitability of a single production line. This line is operating for three shifts with an output of 76,500 units in order to fulfill a particular order. A 1% improvement in the line's OEE score means that instead of taking 118 hours to complete a production run, it only takes 115 hours. This small reduction means that the machine is in operation for three hours less per week, with three hours less heating, cooling and lighting, an overall saving of €1,168 each week in energy alone is made. Add to that the improvements to materials and labor costs and you get an overall saving of €2,210 each week.

OEE Score	At 43%	At 44%	Savings from a 1% improvement
Actual units of production	76,500	76,500	
Hours to produce	118	115	3 hours
Number of rejects	1,500	750	750 items
Labour cost	€11,769	€11,477	€292
Material cost	€76,500	€75,750	€750
Energy cost	€47,077	€45,909	€1,168
Savings per week			€2,210
Savings per year			**€114,909**

Table 1: Significant savings can be achieved from as little as a 1% improvement in OEE

Now, instead of a 1% improvement, what if the OEE for this line was up at 60 or 70%? At this point, the manufacturer could achieve the same level of production in 74 hours, or five two-shift days rather than three. Note that most customers achieve improvements of 20 to 40% during the first year of using an OEE System.

Real World Successes

Smith and Nephew's wound management division were able to demonstrate a reduction of over 2,000 hours of energy consumption with just one production line. A relentless focus on the six major losses of OEE as identified by the OEE system delivered sustainable improvements which resulted in a line that had previously struggled to meet demand over a seven-day period achieving the same output in four-and-a-half days.

British Bakeries, the bread producing division of Premier Foods (previously RHM), has found that by harnessing the power of an OEE Management System to gain greater production efficiency they have been able to reduce their annual gas budget by 7%, or by almost £400,000 pounds year on year. "In addition to savings in labor and product wastage, we have experienced significant savings in energy. Optimized OEE also has a hugely beneficial impact on our energy-efficiency program, which supports our environmental objectives," said Bob King, Group Head of Operational Excellence at Premier Foods.

"In addition to savings in labor and product wastage, we have experienced significant savings in energy. Optimized OEE also has a hugely beneficial impact on our energy-efficiency program, which supports our environmental objectives."

In Conclusion

OEE is a proven technique to measure and monitor manufacturing efficiency. OEE is at its most powerful when used to identify previously hidden losses in productivity, availability, quality and now, perhaps more importantly than ever, energy consumption. While leading manufacturers have justified the use of an OEE System based on improved productivity, they have been surprised to find that perhaps even greater savings can be obtained through the corresponding reduction in energy consumption as production machinery and processes achieve more of their potential.

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Towards Operational Excellence

From Control System to Information Platform

Optimal Operating Status – Within the framework of its Vigilant Plant Automation concept, Yokogawa is integrating substantial components with the new Centum VP process and production control system on the way towards comprehensive Operational Excellence.

Tim Henrichs
Yokogawa

Centum VP has been designed as a central operating information platform and combines well-tried solutions for safety, asset and production excellence, as well as the normal high reliability, availability and scalability of the Centum system. Additionally with complete downward compatibility and continuity of the system architecture. In addition there are numerous improvements and new features, such as a user-friendly, intuitive and task-oriented interface design as well as integrated software solutions.

Vigilant Plant – the Concept for Operational Excellence

Vigilant Plant is Yokogawa's comprehensive automation concept. It is designed to not only enable the safe, reliable and profitable operation of technical process plants but also to implement them systematically.

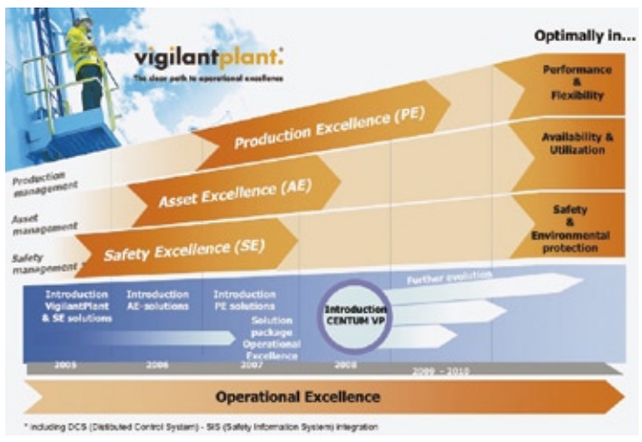
The goal is to achieve a condition of operational excellence in which the personnel can always act in a vigilant, prudent and properly informed manner. These employees can take appropriate action at any time that leads to an optimal operating status and a optimal tuning of production with the economic conditions. The concept thus prevents unplanned stoppages, improves the utilization of the plant and permits a rapid and efficient adjustment of production to changed market conditions.

Vigilant Plant is a multi layered network of complementary core components. Thus, in 2005 the company brought first solutions for Safety Excellence, in 2006 for Asset Excellence and finally in 2007 for Production Excellence onto the market. These tools enable safety engineering, process monitoring and production control to be lastingly optimized. With the market introduction of the new generation of control systems, the Vigilant Plant initiative takes the step into its next evolutionary stage. The three aforementioned excellence solution packages are integrated into a single Operational Excellence platform.

Centum VP – More than a Process Control System

Since 1975, the Yokogawa Electric Corporation has been building and implementing process control systems. Worldwide there are approximately 20,000 installations. Some first generation systems are still in service today, because compatibility and consistency of the architecture have high priority.

Centum VP is the latest system generation from Yokogawa, release 4.01. The Vigilant Plant concept is the godfather for the name suffix of the new platform: VP. The youngest member of the Centum suite follows the Centum CS 3000 system. The full downward compatibility and proven consistency with the predecessor systems is maintained. Therefore, a simple and flexible migration path is guaranteed for all earlier control systems in the Centum suite.



Clarity and user comfort: The display concept of Centum VP

Compatible with All Standard Communication Interfaces

Centum VP also uses Yokogawa's unique Pair & Spare technology for validating data in real time, which doesn't give sources of error a chance and achieves a system availability that has not been equalled in the industry of 99.99999% (seven 9s). Like its predecessor systems, Centum VP also supports all standard communication interfaces with field devices, from Foundation Fieldbus, Profibus DP, Modbus and Devicenet to various Ethernet-based protocols.

At the same time, Centum VP defines a new role for a process control system. The system crosses the boundaries of a traditional DCS (Distributed Control System), whose task mainly consisted of process control and monitoring. Beyond these, it offers integrated access to functions of the corporate information management, asset management, and to supporting functionalities. For the operating crew, a uniform, homogeneous working environment is thus created. This integrated process and production control system smoothes the way much more than any previous solution in order to establish a true operational excellence efficiently and comprehensively in everyday operations. It makes information available even better than before in the logical connection and enables role-based access to all key information.

In order to achieve these goals, Centum VP has been equipped with a variety of new and improved features and capabilities. The platform offers an inherent interface with numerous system components in the context of the operational excellence software suite. In addition proven functionalities are continued and made more accessible and user-friendly.

The New ICC – Task-Oriented Working

The functions of the ICC as the central human-machine interface (HMI) have been completely re-designed and further improved and extended. With complete compatibility with the predecessor systems, the new consoles have a configurable and intuitively-operated working environment. The screen contents are ergonomically designed and optimally arranged in order to prevent operator fatigue and to help them concentrate on the important information in the normal range.

The normal range always has a status border at the upper edge of screen for current plant information. Underneath are navigation and working areas depending upon the varying task within the normal range. Like the entire working area, a part of the navigation range is also freely configurable, at the lower edge of screen is, as expected from other computer applications, the operating system border.

A tab-supported window architecture in the work area, similar to modern web browsers, makes it possible to summarize specific task settings from up to five windows on one tab page and to arrange up to five of these tabs directly in the work area, so that they are directly accessible with a click of the mouse. Thus, a plant manager can handle up to five complex tasks – for instance the monitoring of certain apparatus functions or alarm constellations – immediately accessible for handing over to the person on the next shift for further monitoring. In addition, such tab configurations can be saved and are then accessible over the navigation range. For more strongly visually-oriented operators there is also the possibility of offering miniature views of tabs in a window for selection.

These and other useful aids allow operational processes to be structured logically and ergonomically. Acquired know-how can be applied and passed on, for example by the selection and appropriate arrangement of significant view windows. Since this reflects the specific thinking structures of the plant manager, more efficient, specifically task-oriented working is facilitated.

The new ICC optimally includes all the capabilities of the new, Centum VP integrated process and production control system. It ensures that all users receive information weighted according to their meaning as a direct basis for decisions, instead of an unstructured data flow.

Both the ICCs and engineering workstations can be operated under both Windows XP and Windows Vista. This guarantees a maximum of future security for the appropriate investments.

Everything Under One Roof

For the operation of a technical process plant, numerous functions must be realized concerning processing control and monitoring, asset management and operational support of the plant managers. Normally different systems from different manufacturers provide these functionalities. As a result, a collection of diverse systems controls the operating processes, so that gaps remain and barriers arise, preventing a smooth, integrated operation.

Centum VP is constructed around a single, uniform operating database, which can support all key functionalities in real time and thus enables a homogeneous working environment. This uniform architecture permits more efficient information handling and increases safety and flexibility in the company.

The single operating database also enables the seamless integration of advances applications, processing operating information, stabilizing processes and increasing operational efficiency. The simple and flexible introduction of such applications enables users to make continuous improvements in safety, availability and profitability within their operations. The integration of third-party information systems through OPC interfaces is also achieved through the use of Yokogawa extensions. Through these, this approach also facilitates the planning and implementation of future changes and contributes in such a way to reducing the total cost of ownership over the entire lifetime of the plant.

The Evolution Continues

Integration and the clear visualization of operating information are important features of the latest state of development, which is reflected in the latest release of Centum VP, just as an intelligent equipment availability analysis and efficient diagnostic functions.

In the next stage of development, the compression of performance information into KPIs (key performance indicators) for target-oriented plant operation is a priority, as well as the correlation of key parameters of the economic and process level. In addition, increased use will be made of a model-based description of whole units as well as data mining strategies.

The third step, which we can foresee today, will be characterized by the comprehensive, foresighted handling of all assets, supported by operation-wide valid model descriptions as well as continuous diagnostic, simulation and logic software. In connection with this, a further change of generations is also foreseeable with hardware and software systems.

The evolutionary development of the management will finally reach the stage of a prognosis-based process, based on up-to-date status-oriented reports concerning a KPI-oriented plant operation, whose basis will be reliable forecasts of the future operating status of all equipment and plant components.

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Single-Use Optical Sensors

Ushering in a New Era of PAT for Bio-Processing

Catching-Up – Despite the rapid adoption of the process analytical technology (PAT) initiative by the petrochemical and pharmaceutical industries, the implementation of PAT in biotechnology has been slow, primarily owing to the complexity of large molecular products and the living organisms that produce them. The benefits of embracing PAT in bioprocessing are significant, because understanding the bioprocess and optimizing production efficiency directly result in improving the product and yield.

Traditionally, PAT involved the implementation of sensors or analytical instrumentation for process control. The stringent steam-in-place (SIP) and clean-in-place (CIP) sterilization requirements for traditional bioreactors precluded many sensor technologies from being applied, or if a sensor could be designed to satisfy the requirements, its high cost could not be economically justified. Moreover, in many cases, the bioreactors themselves, being of a 20-year-old design with a limited number of measurement ports, could not be easily modified to retrofit additional sensors.

More recently, the PAT initiative has evolved into a broader context, specifically the identification and control of sources of variability in bioprocesses. With this broader definition, PAT includes the bioreactor and control system design as well.

The ideal implementation of PAT is to introduce new technologies quickly into R&D, with the intent of implementing them early in the design of manufacturing process for new products, before they are validated, and provides three core capabilities to a bioprocess:

Analyze in real-time the uptake of nutrients, growth and viability of the cell population, as well as the concentration and composition of active and side products in bioprocess

Model and predict the process so as to actively control it in real-time

Manage and store all process data, from R&D through cGMP manufacturing, in order to generate a complete genealogy of the process.

The Single-use Revolution

Due to the requirements for handling hydrostatic pressure and the pressure associated with cleaning/sterilization procedures, bioreactors have generally been constructed from stainless steel such as 316L. The initial cost of such a bioreactor and associated plumbing is substantial. The energy cost to run the impeller, the aerator and to cool/heat the bioreactor is also sizable. Finally, the costs of cleaning and sterilizing such a reactor after use and disposing of the waste water from the cleaning process, are non-negligible.

Given the high capital and operating costs associated with conventional bioreactors, single-use bioreactors have become increasingly prevalent in upstream processing. These are constructed using plastic films which have been proven to be biocompatible and animal-derived-component free. One popular design uses a rocking motion to mix and aerate the bag whereas the predominant design uses the more conventional stirred-tank approach with plastic impellers that essentially mimic traditional bioreactors. All disposable bag reactors include gas/liquid inlet and outlet ports, filters, pressure control valves and additional ports for sensors.

Single-use bioreactors represent a unique opportunity for implementing PAT ideology. They are at an early stage in the adoption cycle, being brought into R&D for evaluation, prior to being deployed into manufacturing. Therefore, new sensors and control methods can be tested without risking costly FDA approval. Any process transitioned from a traditional to a disposable bioreactor must be re-validated, so that measurement and control strategies can be changed. Moreover, most traditional sensor technologies are too large or cumbersome for single-use applications, creating an opportunity for new technologies.

Many off-line process analytical tools, such as basic HPLC or blood analyzers are in use with single-use bioreactors today. However, a fundamental need for in-process, real-time sensors remain.

Novel Optical Technologies

Single-use bioreactors have a flexible port design, utilize gamma radiation-based sterilization and are optically translucent, thereby lending themselves very well to the integration of optical sensors. Optical measurements for PAT can utilize any part of the electromagnetic spectrum including ultra-violet (UV), visible (VIS), near-infrared (NIR), and mid-infrared (MIR) radiation to probe the biochemical or chemical system inside the bioreactor bag.

The collected data can be directly or indirectly indicative of the state of the bioreactor medium. Virtually any method that can be directly correlated to an analyte of interest allows for a useful PAT sensor.

Two key optical sensor technologies for single-use bioreactors allow the measurement of dissolved oxygen (DO) and pH. Both techniques apply phase fluorimetry and utilize a dye which has a fluorescent lifetime that is quenched by the presence of the analyte in question. The spot must be in contact with the bioprocess inside the bioreactor bag. The excitation radiation must be delivered to the spot, and the emission radiation from the spot must be delivered to the detection system. The optical and electrical system resides outside of the bioreactor bag.

Most of the spot-based approaches involve either integrating a patch (that holds the spots) with the bag or using a fiber-based optical delivery system into the bag via a port. The former method has the disadvantage that the spots and the optical system must be mechanically aligned in close proximity, whereas the latter method has the disadvantage that fiber-based systems are optically inefficient and expensive. In both cases, significant optical radiation must be delivered to the spot, which results in accelerated photo-bleaching of the dye and long-term measurement drift. This issue is of particular concern for pH, and has delayed the adoption of optical sensors for PAT.

An alternative approach uses a micro-optic light engine for radiation delivery to and collection from the spot, and is already showing better drift results. The spot is housed on a sheath that is inserted into a 12 mm port in the bioreactor bag prior to sterilization. The seal between the port and sheath assures that sterility is preserved. The optical reader is rated for NEMA 4X, allowing it to be used throughout scale-up from R&D to production. RFID tags are used to enter calibration data for each sheath automatically and eliminate human error. The menu-driven transmitter is highly capable and has two analog outputs for easy integration into an automation system. Overall, TruFluor optical DO and pH sensor features are ideally suited for single-use PAT applications.

In the future, optical methods will also be applied for real-time, in-line measurements of nutrients, additives, waste products, and end products. A tremendous improvement in the new optical technologies for bio-processing is expected in the next two to five years. The advent of these technologies will fundamentally and permanently change PAT in single-use upstream manufacturing.

Finally, it should be noted that potential PAT measurement methods for single-use systems are not limited to optical methods, but can include a diversity of alternative physical mechanisms: electrical (RF and DC electrical fields), chemical, biochemical, acoustic, magnetic, and micro-fluidic techniques, or any combination thereof. Other measurements can involve miniaturized or on-chip mass spectrometry, liquid chromatography, flow cytometry, or nuclear magnetic resonance (NMR).

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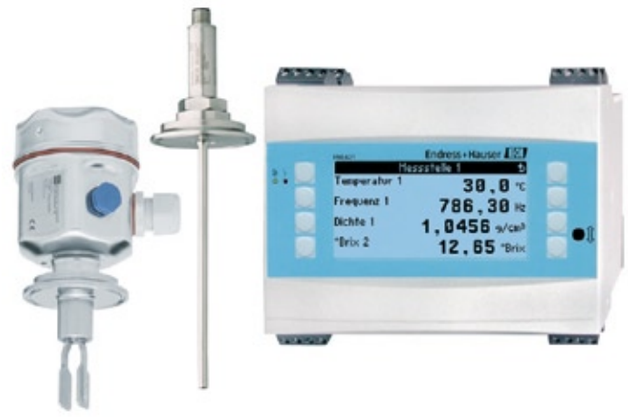
Clever Duo

Limit Switch Transforms Itself Into an In-Line Density Measuring Instrument

Reliable Development – Thanks to a cleverly employed technical feature, Liquiphant, the tried-and-tested limit switch from Endress+Hauser, has reinvented itself as a fully-fledged density measuring instrument. It fulfills the user's request for information directly from the process and is a cost-effective alternative to established measurement methods and also to manual sampling. In the future, the versatile vibration limit switch could be used for 70 % of all density applications.

Thomas Fritz
Endress+Hauser



A complete measuring line consists of Liquiphant M, a temperature sensor and the FML621 density calculator

Several decades ago, G.H. Endress, the company's founder, speculated on whether it was possible to detect a limit level easily. He went on to invent Liquiphant, the vibration limit switch, which is Endress+Hauser's most successful product to-date. Every year countless measuring instruments make their way to the customer, and an end to this triumphant success is not in sight. Recently, an additional electronics component, which is still also directly involved in measuring liquid density, has been added to the product line.

The company's wide range of products made this new development possible. A clever idea: adapt one of their own application manager instruments to measure density. The developers modified the software of the mini-PC in a way that the PC is able to evaluate the connection between density and resonance frequency of the tuning forks, depending on the temperature. The customer can connect up to five limit switches to every density calculator – the greater the number of limit switches, the lower the costs per measuring point. The necessary electronics component is available for each new measuring instrument of the entire Liquiphant M product portfolio.

In comparison to traditional methods for measuring density, the solution from Endress+Hauser is a real bargain. For example, compared to the tried-and-tested flexural vibration, the acquisition costs of an in-line density measurement instrument can reduce costs by approximately 75 %, even with only one instrument at the evaluation unit. Last but not least, the clever and cost-effective duo equally provides the opportunity to increase both safety and process quality thanks to continuous monitoring.

Optimize Processes and Increase Product Quality

Manual samples are only ever a snapshot. The density calculator, on the other hand, immediately registers all changes, however small. In addition to the actual savings in time and costs, the in-line measurement gives the operating personnel 100 % certainty that they are really dealing with the required product and not, for example, a cleaning fluid. The implications would be particularly unimaginable in the food industry. Furthermore, density measurement makes it possible to optimize processes and increase product quality. In addition, the cost of raw materials can be reduced, undesired byproducts minimized and energy costs decreased. At the same time, the one and same measuring system carries out minimum level detection (pump protection function). This removes the need for an additional process connection.

The demand for in-line measuring instruments is ever greater in the pharmaceuticals, chemicals and food industries. One of the user's visions for the future in the "Technology Roadmap on Process Sensors 2005–2015", which Namur and the German Association for Instrumentation and Control collectively published two years ago is: "Sensors are no longer required to only record process information, but also to record interim and trend information on product properties, such as material composition for control purposes."

Thanks to the clever combination of Liquiphant, the tried and tested vibration limit switch, and a smart density calculator, Endress+Hauser has taken a big step towards fulfilling this requirements.

What Makes the Liquiphant M so Reliable?

In general, mechanically vibrating systems, which are activated to their resonance frequency, are used as vibration limit switches. In the case of Liquiphant, this is a tuning fork that forms an electromechanical resonator when combined with an electronics component and piezo crystal. The frequency reduction, which is caused by a liquid covering, is thus a measurement for the level of coverage of the fork. If the frequency drops below a certain limit, the sensor passes the level of coverage on to the downstream digital signal processing. This, in turn, is passed on to the process control via the appropriate interfaces. The piezo drive is the core element of the sensor. With the well-known piezo effect, it is possible to make the tuning fork resonate, as well as to measure the shift in resonance frequency. Parameters such as conductivity, dielectric constant, viscosity, pressure or temperature do not interfere with the function of the sensor.

Changes to the resonance frequency are directly affected by the density of the material. Materials with a lower density, for example liquefied gas (0.4 g/cm³), give rise to higher resonance frequency than materials with a greater density such as water (0.99 g/cm³). The density of the medium can be accurately calculated using mathematical formulae by taking the dependance of resonance frequency, temperature and process pressure into account.

For this purpose, the frequency shift is used, which occurs in the case of changes to density levels caused by different liquids or concentrations. Combined with an external temperature measurement and the FML621 density calculator, the density value of the medium is calculated: reliable and reproducible.

What Can Liquiphant M Do in Combination with the Density Calculator?

Determining the Concentration

Today, the concentration of materials is an important quality factor in the chemicals and food industries. It is often determined in liquids by extensive off-line or laboratory measurements. The newly developed Liquiphant Density now offers the opportunity of determining the concentration by in-line measurements without expensive and time-consuming analytical procedures. It can be easily adapted to the existing application. In contrast to the density, the concentration is always a relative variable and can be calculated in mass or volume units: Brix (specific unit for liquids) stands for an industry-specific measurement unit in the food industry and is used to determine the sugar content of fruit juices or soft drinks.

Detecting Mediums

A softdrinks manufacturer needs to differentiate between a cleaning agent, water and soft drink in the piping system. To ensure that the raw product to be filled is in the pipe, the density sensor is fitted in the pipe before filling. Up to now the mediums were separated optically. The particular advantages of in-line measurement are continuous monitoring, increased accuracy and reproducibility.

Determining The Salt Content

In this application, a certain salt concentration, which depends on the depth of the drill holes, is required in oil production. The oil-water mixture is transported to the surface by the greater density of the salt concentration. Liquiphant Density ensures that the required salt concentration is continuously mixed in the tank without manual intervention. In comparison to the previous inspection, this alternative has more advantages: high-precision measurement (0.002 g/cm³) and great reproducibility (0.0007 g/cm³).

New Areas Of Application

This new line of density measuring instruments can basically be used in all non-crust-forming liquids. Density as a ratio of mass and volume is an important key parameter.

Liquid densities are required to solve the following tasks, among other things:

- Determine density
- Automatic detection of mediums in liquids
- Determine the concentration of liquids (acids, sugar content, alcohol etc.)
- Determine purity of liquids
- Convert into units Brix (sugar content), Baumé (salt content), Plato (wort)

The enhancements made to the well-known limit switch to make it an in-line density measuring instrument reduce costs – the cost-effective alternative to traditional density measuring instruments, such as measuring extract content, flexural vibration or ultrasonic.

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Liquiphant M for sector-specific applications measures density and quality.

User's Perspective

Enhanced EDDL Analysis and Evaluation

Standardization – Two years ago, the International Electrotechnical Commission (IEC) issued international standard IEC 61804-3, Electronic Device Description Language (EDDL). This incorporates a number of language enhancements to address data storage, graphical user interfaces and process-parameter representations which the earlier standard (IEC 61804-2) lacked. In response, the Fieldbus Foundation (FF), HART Communication Foundation (HCF), Profibus International (PI) and OPC Foundation (OPC) quickly agreed on a number of improvements that utilize EDDL.

The major benefit of using EDDL to integrate field devices is the common interface look and feel it provides for all devices, since the user interface generated is keyed to the Electronic Device Description (EDD) execution environment (host). EDDL and the device descriptions it generates are independent of the operating systems involved – a fundamentally different concept from proprietary software such as Microsoft Windows. Numerous publications and press reports have identified what they call limitations of this cross-device approach, particularly when it is used with complex field devices.

BIS Prozesstechnik's testing laboratory in Frankfurt, Germany, conducted comprehensive testing to clarify the extent to which the current EDDL standard allows the process automation industry to meet the demands of device startup, operation and diagnostics. During an online test, the lab developed a series of typical scenarios that could arise during device life cycles and verified these on existing devices.

Device Integration in Process Automation

The term "device integration" in process automation means using software to provide users central access to field-device data and functions. The software used allows staff to access and manage engineering, startup and maintenance data during operation and maintenance phases. Current market demands require this multi-phase coverage of system life cycles. Two technologies have become established in the marketplace to facilitate this: Field Device Tool (FDT) and Electronic Device Description Language (EDDL). Although both have their advantages and disadvantages, they should meet user demands, as formulated under Namur recommendation 105.

Testing Procedures

The BIS Prozesstechnik test program, called Analysis of Enhanced EDDL (IEC 61804-3) and Evaluation of Its Usability, from the User's Perspective, included two parts:

- Planning and startup phase
- Operation and maintenance phase

Each scenario contained a series of testing stages. The results were also used to provide valuable information for device and host manufacturers. Figure 2 shows the configuration of the test system employed. The test system contained devices for measuring temperature, pressure and level, as well as various actuators and a frequency converter. Devices equipped with FF/HART/Profibus DP/PA interfaces were available.

Planning and Start-Up Phases

A number of questions from the user's perspective arose during planning and startup phases and received careful consideration during testing.

Which device models suit which EDD revisions, and are there any incompatibilities between host-system and device EDDs?

The authors of the specification believed it was important to keep existing EDDs from FF/HCF libraries upwardly compatible to protect existing installations. Compared to HART and FF, Profibus supports the most extensive subset of the entire linguistic syntax specified under the standard. BIS noted that host manufacturers were working feverishly to implement the standard, and had either already implemented it within broad areas, or will have completed its full implementation in the near future. Because of the various stages of development, some dependencies remain. If the suppliers of host systems uncompromisingly and fully implement the standard as they have stated, interoperability – a single EDD per device – can be realized. It should be clear to users which software integration should be used for particular host systems.

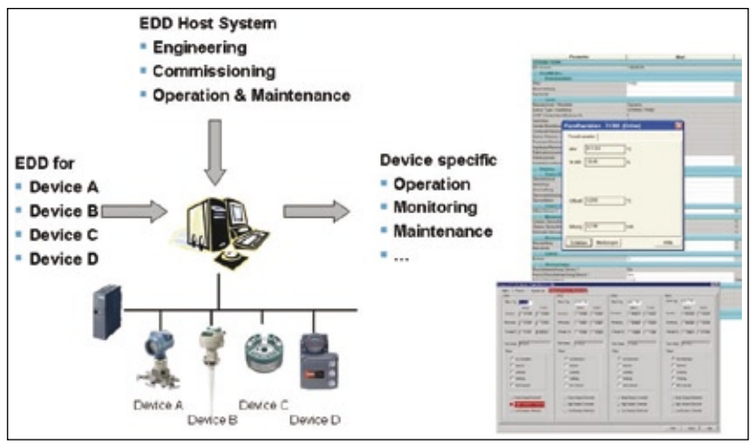

Fig. 1: Device integration in process automation

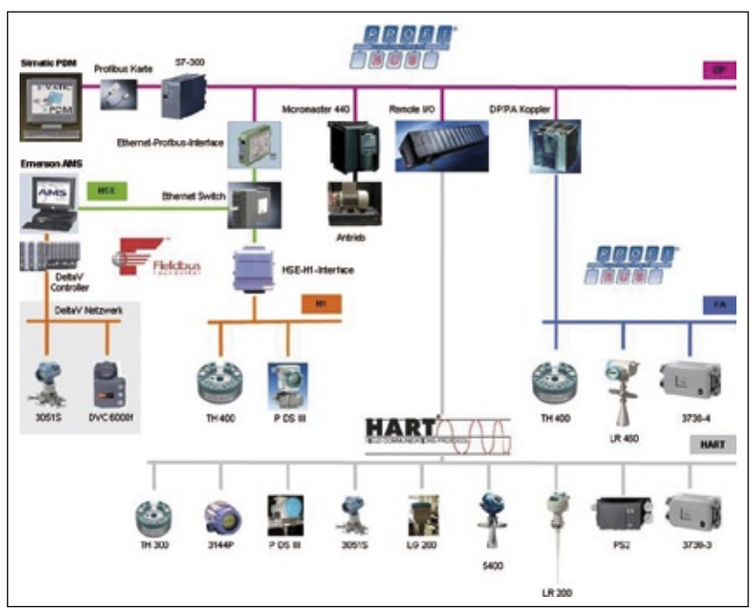

Fig. 2: Configuration of the test system

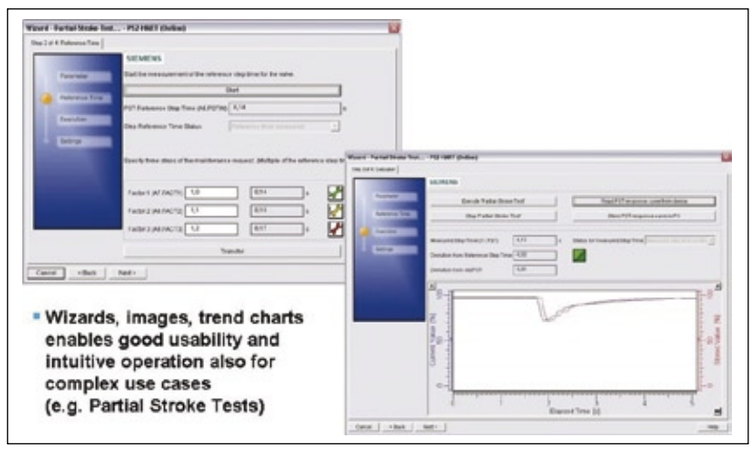

Fig. 3: Sample staged conduct of a partial-stroke test on an actuator

Which software tools are needed for those phases?

For planning and startup purposes, it is sufficient to install an EDD host system that allows a number of basic functionalities and covers every device involved. The next step is to load the enhanced EDDs supplied by device manufacturers onto the respective host systems for each device involved. Offline viewing of the EDDs then provides users with a brief overview of the applications and features of the various devices.

The devices involved frequently incorporate numerous (over 200) parameters. Users formerly had to search through long lists of parameters to find the correct ones before setting these on each device. However, many users only need short subsets of parameters for their applications. These essential parameter settings may be set by wizards that allow rapid, intuitive, device startups. Beyond the installed host systems and device EDDs, no other software tools or add-ons are needed for that phase because the data needed for the planning phase remains available.

Which protocols are supported by EDDL?

IEC 61804-3 describes the language content for use with FF/HART/Profibus DP/PA devices. None of the host systems currently available support all of the protocols involved. However, Emerson Process Management and Siemens have stated that their host systems will support all three protocols within the next year or two.

Are software updates necessary to utilize all features?

The test lab investigated the completeness of the EDD's functionalities and host systems supplied. In the case of all those EDDs that had been installed, the lab found that the host systems currently being supplied almost completely support all EDDL enhancements. Since current EDDs have been only slightly tailored to suit given host systems in areas related to their graphical user interfaces, those host systems need no updates or add-ons to fully execute such EDDs. However, the goal must be the ability to utilize EDDs that exploit the full complement of EDDL's features on any host system.

Operation And Maintenance Phases

The following questions were analyzed for the operation and maintenance phases, based on various scenarios arising during actual operation.

Is error free installation of an EDD possible, even on existing installations and during operation?

A catalog of devices will usually be provided for installation of a host system. Some or all of these devices may be installed on the system. Host systems have their own applications for retrofitting devices. EDD setup procedures will thus have the same look and feel, which is highly beneficial. Even during operation, installation of device EDDs utilizing the applications mentioned proceeded rapidly and without errors. Since the EDD syntax is translated, or interpreted, only by the host system, EDDs have no effect on the operating system involved. No restarts were necessary following their installation. There also were no interactions with Windows system files.

Can devices be simply, intuitively operated?

To answer that question in conjunction with testing, the lab defined a series of different applications scenarios for various types of devices, ran the applications, and analyzed the results. Example scenarios included "rapid" operational procedures under which users had to set only the essential parameters and conduct procedures typical for the devices involved. These procedures included the partial-stroke test for actuators and determinations of the echo profiles of level radars. A series of language enhancements under IEC 61804-3 allow much more flexibly configuring user interfaces than was formerly possible.

The first step involves setting the values of parameters, such as starting position and step length. A graphical display clearly informs users what each parameter means. The second step involves measuring the reference time and determining the limits beyond which violations of the reference time will trigger notifications about maintenance status. Users may then conduct a partial-stroke test, save the plot, and compare it to earlier measurements. This sort of representation guides users step by step through the procedures involved, without need for consulting other documentation. It is a very good example of how EDDL may be used to implement a complex operational procedure in an intuitive manner. In general, the lab found that EDDL allows users to intuitively implement all typical types of processing-instrumentation scenarios if device manufacturers consider usability and take advantage of EDDL's features.

Is it feasible for user interfaces and operational procedures to have a common look and feel?

All host systems support a number of basic functions, such as reading, writing, printing, numerical comparisons and data storage. The lab found that in all cases certain functionalities, such as device status transmittals or processing parameter displays, could be called up by users from the same locations. Since those basic functions are not constituents of EDDs, they appear on the respective host systems in forms that have a common look and feel. However, device operational procedures or parameter terminologies, which are usually implemented in EDDs, differed from manufacturer to manufacturer in this test program. Visual displays of EDDs were previously dominated by text entries and tabular data. Much more sophisticated interfaces may now be implemented, although they may differ widely from manufacturer to manufacturer. It is imperative that a guideline be developed to implement EDDs for typical types of devices from all manufacturers, particularly during early implementation of the standard. That guideline should cover the terminology used to define parameter names and devote particular attention to how the parameters involved are formatted, including their offline/online representations and diagnostics.

Can all device functionalities be implemented using EDDL, or are additional tools necessary?

Of course, the growing complexity of the current generation of processing devices imposes more stringent demands on user software. EDDL is frequently criticized for its failure to allow implementation of complex device operational procedures. However, the BIS testing showed that all operational procedures relevant to the tested devices could be implemented without the need for additional software. These included the handling of interfering echoes in the case of level radars, the calibration procedures for temperature gauges and the startup of frequency converters.

To Summarize

From an engineering standpoint, EDDL per IEC 61804-3 is a step in the right direction. It incorporates all of the features needed for the intuitive operation of modern devices employed in processing industries. However, the testing to date has also shown that discrepancies among the various manufacturers occur, particularly with implementing the standard on host systems. This can lead to interoperability problems. Nevertheless, those discrepancies should become a thing of the past over the next two years. In the future, device manufacturers will only have to develop a single EDD for each device, regardless of the host system involved.

Like other new software technology for use in the processing industries, the more flexible language of enhanced EDDLs invites device manufacturers to exercise their creativity. Since the varying terminologies and parameter layouts can lead to unnecessary user confusion, manufacturers should agree on a common guideline to address those aspects. Fortunately, the Profibus users' organization has already initiated activities in that area within the EDDL Working Group.

Analyses of the language and its implementations in the form of device-EDDs have shown that the current version of the IEC standard allows user-friendly implementation of all relevant device functions – from planning and startup to operation and maintenance – without the need for additional software. User organizations are aware of the demands of Namur recommendation 105 regarding independence from operating systems and certifiability. It is now up to device manufacturers to consistently apply EDDL technology to a comprehensive range of devices.

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Linde to Cut €800 Million in Costs

Industrial gas supplier Linde launched a four-year programme to cut up to €800 million in costs starting next year in a bid to hit its mid-term targets amid weak markets. Linde has kept its 2008 outlook and its medium-term goals after meeting market forecasts with a 6.5 % jump in third-quarter underlying earnings on the back of emerging market growth and demand for cleaner-burning fuels and factories. Pre-exceptional earnings before interest, taxes, depreciation and amortisation (Ebita) rose to €652 million from 612 million a year earlier, in line with the average estimate of 648 million in a Reuters poll of 16 analysts. Linde, which ranks a close second to France's Air Liquide in terms of world market share, said it continues to expect earnings to outpace sales growth this year. It also stuck to its 2010 goal to achieve Ebita of more than €3 billion and a return on capital employed of at least 13 %. "The economic crisis has not yet had an impact on us," Chief Executive Wolfgang Reitzle said. But Linde said its mid-term targets "must now be seen against a background of a more uncertain and significantly weaker economic environment." ■

Lurgi Signs Contract with Interraph

Lurgi has signed a global agreement for usage of the Intergraph SmartPlant Enterprise engineering suite. They have joined the worldwide Software License Agreement (SLA) of their parent company Air Liquide. The contract will cover a term of two and a half years. Lurgi will implement the SmartPlant Enterprise solutions suite in two phases. Phase 1 includes all SmartPlant products for Front-End Engineering & Design (FEED) as well as the implementation of Intergraph's information management solution, SmartPlant Foundation. This solution supports the integration of all applications and enables the worldwide cooperation of all Lurgi companies through the access to all common information. In phase 2, Lurgi will migrate from Intergraph PDS to the next-generation SmartPlant 3D. Lurgi is expecting that the worldwide usage of Intergraph's SmartPlant Enterprise solution in combination with their own strengths in innovative future technologies will result in a distinct increase in productivity and quality. ■

Controversy over ISA Name Change

The initials "ISA" still remain but what they stand for has changed. ISA's Council of Society Delegates voted in their annual meeting in Houston, U.S. on Oct. 14 to change the organization's name from "Instrument Society of America" to "International Society of Automation" by an overwhelming majority according to an ISA statement. However, the name change has not been seen favorably by everyone, as can be read on many internet blogs. The point of discussion being the changed focus from "instrumentation" to "automation." Nevertheless, this is not the only discussion point being revealed.

CHEManager Europe received an email from Dieter Schaudel, who was till recently member of the

Dieter Schaudel
Endress+Hauser

Endress+Hauser Executive Board and Vice Chairman of the VDI/VDE Association of German Engineers. In his email he informed us of his decision to withdraw his ISA membership of over 26 years and included his letter of termination to ISA in which he states that he is "not prepared to support the decided change of name". Unlike the blog debates, Schaudel's decision revolves around the term "International." In his letter to ISA he writes the "change of name implied claim of ISA to world dominance in automation engineering, ie. a further form of American imperialism". Schaudel also informed us that he and other German ISA members had raised this argument to ISA in writing but did not receive any form of reply to their worry. In his email, Schaudel also mentioned that he was under the impression that the VDI/VDE Association of German Engineers would be making a comment. "Internationally, we are excellently positioned with IFAC in automation, the world does not need a new American society with an international claim to power," Schaudel wrote. ■

Cost Containment

Why Product Lifecycle Management is Important for the Pharma Industry

Mounting Pressure – As products responsible for an aggregate of $115 billion in U.S. sales will be subject to generic incursion between 2007 and 2012, effective lifecycle management is becoming a must for pharma companies looking to maximize the return on their considerable investment.

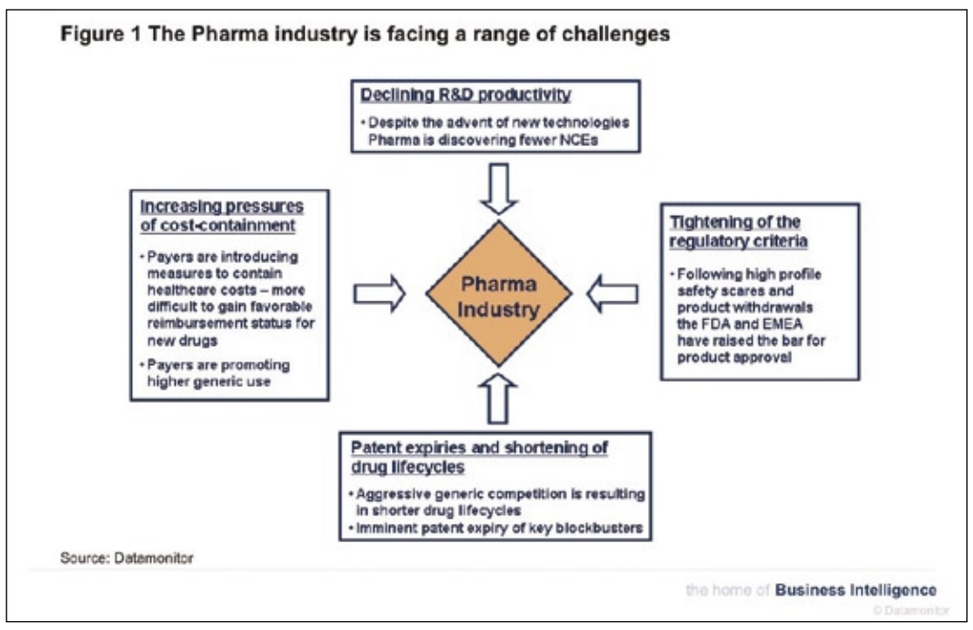

Fig. 1: The pharmaceutical industry is facing a range of challenges.

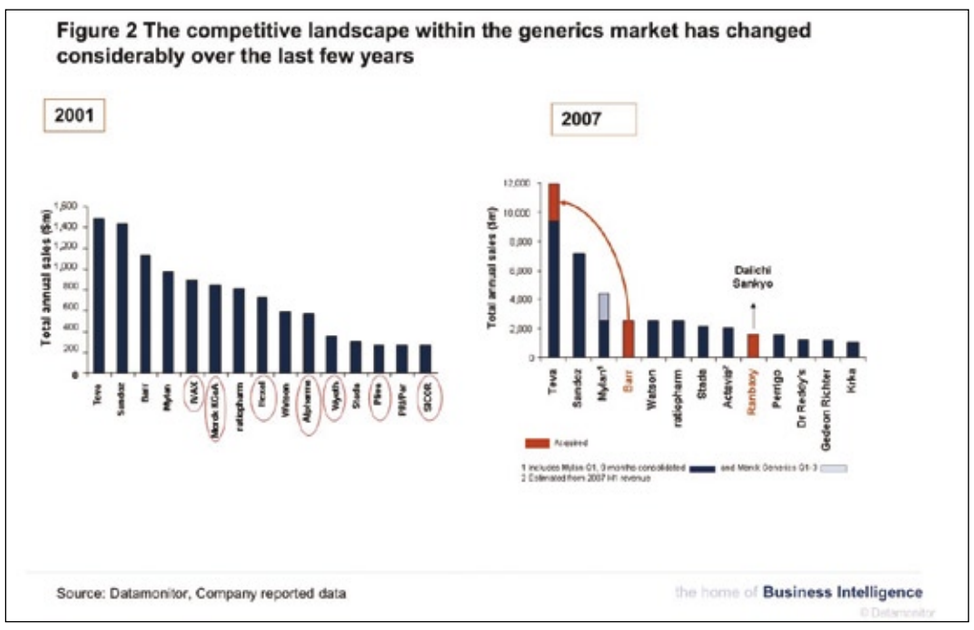

Fig. 2: The generics market landscape is evolving as a result of intense consolidation.

Challenges for the Pharma Industry Today

The pharmaceutical industry is facing a range of challenges that are threatening its profitability (fig. 1). Despite the growing investment in R&D, the output has slowed significantly, with only 19 new products approved by the FDA in 2007, the lowest for over 20 years. This dearth of new products is coming at an inopportune time, when it is most needed to replace sales lost to generic erosion in an increasingly competitive marketplace.

Cost-Containment Pressures

Healthcare expenditure has been rising steadily over the last few years in all major markets, and although expenditure on pharmaceuticals accounts for only a fraction of total healthcare expenditure – 12.4% in the U.S. rising to 22.8% in Spain – it represents an easy target for payers to focus on. Consequently, in an effort to reduce drug spending, payers have introduced a range of measures aimed at cutting their drugs' bills, such as mandatory generic prescribing, automatic substitution with generics, financial penalties for physicians with low generics use, price cuts or controls, growing use of cost effectiveness analysis in reimbursement decisions and tiered formularies with stepped patient co-pay.

The imminent patent expiries on key blockbusters present a great opportunity for payers to contain costs through greater generic drugs use. From 2007 to 2012 the top 50 pharma companies are facing patent expiries on $115 billion worth of drugs in the U.S. alone (based upon forecast full-year sales in the year prior to patent expiry). Consequently, generics use is set to grow in all major markets.

The mature generics markets of the U.S., UK and Germany already have high generic use, up to 64% by volume in the UK in 2006, and the competition is intensifying as payers are either concentrating on specific drug groups or are introducing new measures to stimulate generic use even further, at the detriment of the branded and generics companies alike.

The immature generics markets of France, Italy, Spain and Japan still have low generics penetration, but with recent regulatory changes aimed at driving generics use, these are poised to grow. Japan has seen the most dramatic changes over the last two years, the most significant being that instead of having the option to allow substitution with generics, physicians must now expressly forbid it on the prescription if they so wish. This change, in addition to the introduction of financial incentives for pharmacists dispensing generics, and changes in the supply chain are heralding a new era. Although any significant effect is yet to be felt, generics use has already grown (estimated at 17% volume share) and the market dynamics are expected to change significantly, if slowly in this traditionally conservative market.

Wave of Consolidation Among Generics Companies

In addition, the generics landscape has gone through considerable changes over the last few years as a result of intense consolidation activity (fig. 2). This has resulted in the creation of large generics powerhouses such as Teva and Sandoz, but has also propelled some of the smaller players such as Mylan into the third position.

This trend for consolidation has been driven by several different factors:

- maintaining or growing margins by economies of scale and vertical integration;
- access to new markets (geographical expansion or entry into new therapy areas);
- access to new competencies (injectables, difficult to make generics or biosimilars).

As a result, strong new generics companies equipped with advanced technological capabilities have emerged and have also become more aggressive when it comes to challenging patents and launching generics at risk, resulting in earlier generics entry. This trend towards increasing consolidation in the sector is likely to continue in the wake of yet another large takeover of U.S.'s Barr by Israel's generic giant Teva.

The net effect of the combined regulatory changes that are driving growing generics use and the consolidation among generics players is that generic erosion post patent expiry is even more pronounced, especially in the mature generics markets. The immature ones are expected to evolve in the same direction, albeit more slowly.

Notably, Indian generics companies have actively sought to expand their geographical footprint in the major markets, including the immature ones, as exemplified by the recent acquisition of Italy's Jet Generici and Germany's Betapharma by Dr. Reddy's and Spain's Mundogen by Ranbaxy. With low operational costs these companies are in a better position to enter the small and currently unprofitable markets of Italy and Spain and to weather the rough times before the ongoing reforms result in significant market growth. In addition, the increasingly competitive mature generic markets of the U.S., UK and Germany present an opportunity for these firms that are looking to increase their presence there.

Product Lifecycles Are Getting Shorter with Lower Peak Sales

With product lifecycles becoming shorter, the situation is being compounded by a dearth of new products needed to replace lost revenues. Thus, lifecycle management strategies have been propelled to the top of the agenda for many brand managers.

The pharmaceutical industry has spent a great deal of effort speeding up the uptake of newly launched drugs, but with growing competitive pressures from me-too drugs and tighter reimbursement criteria, this is becoming harder to achieve impacting both launch and peak sales. In addition, as a result of low level of product differentiation, other drugs in the same class are affected when the first one loses patent protection as a result of the growing practice of therapeutic substitution with cheaper generics. Thus, sales are impacted much earlier in the lifecycle even before the actual patent expiry of the drug. This phenomenon has been observed in the case of Pfizer's Lipitor (atorvastatin) whose sales volume declined in the U.S. following the entry of generic simvastatin.

The level of brand erosion observed after patent expiry is growing every year and in some cases can be as high as 95% brand volume sales loss one year after patent expiry, as seen in the case of Pfizer's Norvasc (amlodipine), or even more severe: Novartis's antifungal treatment Lamisil lost 93% of its sales volume only two quarters after generic entry in July 2007. Although these two examples may be extreme they still illustrate the deleterious impact patent expiry can have on brand sales.

Therefore, effective lifecycle management is becoming a must for pharma companies looking to maximize the return on their considerable investment. However, it is becoming increasingly difficult for pharma companies to do so with their current lifecycle management approach. With increasing cost-containment pressures and scrutiny of the pharma industry's response to dealing with patent expiry, lifecycle management requires early consideration and a thorough understanding of each market. Payer behavior is especially important and will determine which strategies companies decide to implement in specific markets. With over $100 billion worth of product sales becoming subject to generic competition from now until 2012, Pharma simply must adapt to the changing market climate.

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CSC Wins FDA Contract

Computer Sciences announced that it is one of ten contractors awarded an Information and Computing Technologies for the 21st Century (ICT21) contract by the FDA. The contract supports an extensive IT modernization program for the FDA, encompassing data management and warehousing, and IT infrastructure and security. The indefinite-delivery/indefinite-quantity (IDIQ) contract has a 10-year base period and a maximum ceiling value of $2.5 billion for all firms. ■

Philips Develops "Intelligent Pill"

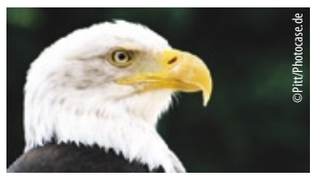
PRODUCT

Dutch group Philips has developed an "intelligent pill" that contains a microprocessor, battery, wireless radio, pump and a drug reservoir to release medication in a specific area in the body. Philips, one of the world's biggest hospital equipment makers, said that the "iPill" capsule, measures acidity with a sensor to determine its location in the gut, and can then release drugs where they are needed. Delivering drugs to treat digestive tract disorders such as Crohn's disease directly to the location of the disease means doses can be lower, reducing side effects, Philips said. While capsules containing miniature cameras are already used as diagnostic tools, those lack the ability to deliver drugs, Philips said. The "iPill" can also measure the local temperature and report it wirelessly to an external receiver. ■

EU Agency Backs Glaxo's Alli for OTC

Glaxosmithkline's weight-loss drug Alli has been recommended for sale over the counter in Europe, the European Medicines Agency said. The agency backed the drug's use without a prescription after concluding a lower dose 60 mg capsule was effective in helping people lose weight with milder side effects than the existing 120 mg dose, which requires a prescription. Glaxo said the medicine for overweight adults could be launched across all 27 EU countries in 2009 as the first weight loss treatment available without a prescription. It also said it expects the drug to fuel growth for its consumer business following a successful U.S. launch of the product in 2007. "This is the first time a non-prescription product has been centrally reviewed and given a positive opinion by the (EU agency)," John Clarke, president of the company's consumer healthcare unit said. The WHO classifies around 400 million people around the world as obese, representing an increasingly lucrative market for drug makers. ■

Hungary's Egis Eyes Takeovers



Hungarian drug maker Egis said it is in the market for an acquisition in central and Eastern Europe and sees an increase in exports during its next fiscal year. "We have the cash and we are openly examining every (acquisition) opportunity," Egis CFO Laszlo Marosffy told a news conference at a presentation of its fiscal 4Q results. "Our aim is to find a factory in the region where Egis operates," Marosffy said. "If it happens to be a country outside the European Union it has the small benefit that patent laws are different ... but this is only one aspect." The company reported a 137% rise in unconsolidated 4Q net income to 5.88 billion forints ($28.9 million), beating market expectations, on the back of exchange rate gains and the sale of a Polish unit. Marosffy said the company expected sales in its domestic market, where price cuts curbed income by an annual 4% in the fiscal 4Q, to rise by 3% in the next fiscal year which began on Oct. 1. He said the company planned to launch five new drugs in Hungary in that period, including three own products and two licensed drugs. In Russia, Egis expects sales to rise by about 10% in dollar terms, which Marosffy said was a "moderately optimistic" estimate. In Poland, the company's biggest market in central and eastern Europe, Egis forecast 20% revenue growth. However, Marosffy said Egis, majority owned by France's Servier, was not likely to change its existing dividend policy. Marosffy was upbeat on production costs, which dropped by 6% to 9.52 billion forints in the fiscal 4Q, down by 4.7% as a proportion of sales to 39.2% year on year. "Costs relative to production have declined and hopefully will decline further next year," Marosffy said. ■

GSK Job Cuts

GlaxoSmithKline said it plans to close its Dartford manufacturing site in south-east England by 2013 with the loss of 620 jobs. The decision to close the facility, which is subject to consultation with trade unions and staff, reflects falling demand for drugs made at the site as patents expire, and is part of an ongoing review of operations across the group. CEO Andrew Witty, who took over in May, has made increased efficiency one of his top priorities for the company as he seeks to improve returns to shareholders after several years of lacklustre performance. Glaxo told staff it was axing 1,000 sales jobs in the U.S. by the end of 2008 as it reorganizes the operation there to compete in an increasingly tough market. Earlier this year, it announced plans for 1,200 job cuts in research and development. The two biggest-selling products made in Dartford are Lamictal for epilepsy and Valtrex for herpes, which together account for 60% of volumes manufactured at the site. Sales of both, however, are set to fall. Lamictal has faced generic competition from July this year, while Valtrex is expected to lose patent protection in late 2009. "The current level of manufacturing activity at Dartford is not expected to be replaced by the same level of new business, driving utilisation at the site down to an unsustainable level," Glaxo said in a statement. Production of newer products that are currently proposed for manufacture at the site will be transferred to other Glaxo factories. Drug companies worldwide have eliminated thousands of jobs in the past two years as a lack of significant new drugs, declining sales of lucrative flagship franchises and fierce competition have cut into profits. Pfizer, Merck & Co, AstraZeneca, Wyeth and Bristol-Myers Squibb are among other leading firms to have cut jobs significantly. ■

U.S. Court Upholds Ruling Against Teva

A U.S. appeals court ruled that generic drug maker Teva may not sell a version of the acid reflux drug Prevacid because TAP Pharmaceutical Products holds the patent. The U.S. Court of Appeals for the Federal Circuit upheld a ruling by a district court in Delaware, which found that TAP, a joint venture of Japan's Takeda Pharmaceutical and Abbott Laboratories, had a valid and enforceable patent. The two companies have ended the joint venture, with Takeda receiving the rights to Prevacid, which has annual sales of about $2.3 billion. ■

Watson Files Lawsuit Against Barr

Watson Laboratories has filed a lawsuit in the U.S. District Court of Delaware against Barr Pharmaceuticals and its subsidiary Barr Laboratories for infringement of patents listed in the Orange Book for Watson's product Oxytrol (Oxybutynin Transdermal System). The lawsuit is based upon an Abbreviated New Drug Application (ANDA) filed by Barr requesting approval to market and sell a generic version of Oxytrol to be sold in the U.S. prior to the expiration of the Orange Book listed patents. In its notice letter to Watson, Barr alleges that patents covering Oxytrol are invalid, unenforceable and/or will not be infringed by Barr's manufacture, use or sale of the product described in its ANDA. ■

Genentech Rising

A clinical study of Avastin plus chemotherapy in patients with early-stage bowel cancer is to continue as planned after independent experts backed its safety record, the drug's maker Genentech said. The study is being closely watched by investors, since it could open up a major new market for the medicine, and analysts said the news may strengthen Genentech's hand in talks with Roche which wants to buy out the U.S. biotech group. Roche is offering $43.7 billion, or $89 a share, for the 44% of Genentech it does not already own. Genentech has dismissed the bid as inadequate. ■

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Chiral Conundrums

The Growing Regulatory Battlefield of the Pharmaceutical Industry

Racemates – With the ongoing pressure within the pharmaceutical industry to develop new products and keep them protected for as long as possible from generic companies regulatory battles are brewing.

Many medicines are chiral molecules; that is they exist in different forms, or enantiomers, that are mirror images of each other, and these forms are known as "S" and "R" or (+) and (–). Chiral compounds can exist as 50/50 mixtures of the single enantiomers, when they are known as racemates.

Because the proteins that drugs target in the body are also chiral, then the effects of each single enantiomer on the target protein can differ. So, for example, one enantiomer may fit well to a particular receptor, but the other may not – like trying to put a left-handed glove onto your right hand. As a result of these differences the single enantiomers of a molecule may exhibit very different therapeutic effects as well as side effect profiles.

If a medicine in development, or even on the market, is a chiral molecule then pharmaceutical companies often try to resolve the racemic mixture into its single enantiomers, although this may not be straightforward, as individual enantiomers have the same physical and chemical properties such as melting and boiling points.

There are several benefits of isolating single enantiomers. Firstly, single enantiomers are generally preferred by regulatory authorities over the racemate, so this may help with product approval. Secondly, a single enantiomer may be a better medicine than the racemate, with superior therapeutic efficacy and a better safety profile. Lastly, the development of a single enantiomer from a marketed racemate is a useful product lifecycle strategy in order to extend the exclusivity of the product. Patients and doctors may be persuaded to move from the racemate as it goes off patent to a new single enantiomer medicine protected by new patents and regulatory data exclusivity. Some examples of this approach are the development of the single enantiomer esomeprazole from the racemate omeprazole and the single enantiomer escitalopram from the racemate citalopram.

Legal Tools

The legal and regulatory tools allowing innovators to protect a single enantiomer that has been developed from a racemate are patents and regulatory data exclusivity.

Patents

In order for a patent to be valid, the invention that it claims has to be new (in that it has not been clearly publicly disclosed before the patent was filed) and must also contain an inventive step over the existing technology. Two recent cases in the UK have explored these requirements in relation to two single enantiomers resolved from previously marketed racemates; escitalopram and levofloxacin. In these cases, the court adopted the same approach to novelty as the European Patent Office, and said that the fact that the racemate was known, and therefore it was known that the single enantiomer existed, did not, from a legal standpoint, disclose the single enantiomer, because no one had ever been able to make it independently before.

What about the inventive step? All medicinal chemists know that there are various possible routes to resolve a single enantiomer from the racemate, such as reacting the racemate with an enantiomerically pure reagent to create two different salts, separating them and then recovering the optically pure enantiomer. Alternatively, if the synthetic route of making the racemate involves a chiral intermediate then it would be possible, starting with the right stereospecific intermediate, to create the single enantiomer through a series of reaction steps whilst preserving the stereochemistry. However, although these general tools are well known, in the cases of levofloxacin and escitalopram the court said that there were no pointers or guidance within the existing technology as to which techniques would work and which reagents to use to resolve these particular enantiomers. The solution could only be obtained by carrying out a research programme and therefore the patents were inventive and valid.

Regulatory Data Protection

If you can obtain a patent to cover a single enantiomer then you get a 20 year period of protection, but if you cannot, for example if it is easy to resolve the racemate and therefore not inventive, can you rely on regulatory data protection to keep competitors at bay? By way of background, the data that innovators submit to regulatory authorities to obtain a marketing authorisation for their product is protected, such that generic pharmaceutical companies cannot refer to it for a period of eight years from the grant of the innovator's marketing authorisation. After that, they can refer to it to support their "abridged" application for a marketing authorisation for that product, but cannot launch their generic product for a further two years (or three years if the innovator has obtained new indication for the product that is of significant clinical benefit). In this way the innovator is rewarded with 10 or 11 years exclusivity for the effort and expense that it has incurred to carry out clinical trials to show that the product is safe and effective.

In order to obtain a marketing authorisation for a single enantiomer, even where the racemate has previously been marketed, the innovator still has to submit a full data package to the regulatory authorities, in accordance with what is known as the chiral guidelines. Some innovators had thought that they would get a full period of data exclusivity for the enantiomer as they equated the requirement to submit a full data package with the designation of the product as a new active substance. However, the law changed in 2005 to the effect that single enantiomers are considered to be the same active substance as the racemate unless they differ significantly in properties with regard to safety and/or efficacy. Therefore, prima facie, a single enantiomer will not get any extra period of data protection over and above that given to the racemate. This defeats the object, from a regulatory point of view, of developing a single enantiomer from a racemate in order to extend the product's lifecycle. Further, it appears that the decision as to whether or not the single enantiomer differs significantly from the racemate will be made at the time of the generic application, not when the innovator's authorisation for the single enantiomer was originally granted. But this issue is currently a matter of dispute in the European courts.

Supplementary Protection Certificates

Returning to patents, it is possible to obtain an extension in Europe, called a Supplementary Protection Certificate (SPCs), of up to five years to the basic 20 year patent term. However, the scope of the patent protection during this extra period is limited to covering a product that falls within the patent claims, rather than simply extending the patent across its full scope. In order to obtain this extra period of protection, several requirements have to be met, one of which is that the product that falls within the claims of the patent is covered by a marketing authorisation. Further, this marketing authorisation must be the first authorisation to place the product on the market as a medicinal product. In a very recent case relating to an SPC for the single enantiomer levofloxacin, a generic company argued that the SPC was invalid because the marketing authorisation for the racemate ofloxacin was the first marketing authorisation for that product as the racemate contained the single enantiomer. The Court disagreed and the SPC was valid. The main reason it gave was that there were significant differences in the activity of the two single enantiomers and the racemate, so they were not the same product, although to the observer the differences in this case do not seem to have been that great.

Conclusion

Single enantiomers are important products for pharmaceutical companies. They can be protected by patents, SPCs and data exclusivity. Clearly, for innovators, the more layers of protection for the product, the better, but to achieve the maximum protection the single enantiomer has to satisfy some quite disparate requirements. So, to obtain patent protection the resolution of the single enantiomer has to overcome some technical difficulty. Then when obtained, the single enantiomer must also exhibit significant differences from the racemate in terms of safety and efficacy in order to obtain data exclusivity protection and also the protection of an SPC. As the pressure on pharmaceutical companies to find more new products to fill their pipelines intensifies, the legal and regulatory battles in this field will only intensify as well.

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Novartis Q3 Boosted by Drug Sales

Novartis said 3Q net profit rose 32% to $2.08 billion, helped by strong sales of its top-selling blood pressure medicine Diovan, and raised its full-year forecast for drug sales. The Swiss drugmaker raised its drug sales growth forecast to a mid-single-digit rate in 2008, from a previous low single-digit rate, and said it would cut 550 jobs in the U.S., about 0.6% of its global workforce. Like many pharma firms, Novartis has enjoyed a run of relative success during the financial crisis, with its shares almost unchanged over the last month thanks to its fairly secure earnings and dividend profile. "Novartis delivered a solid performance in Q3," said DZ Bank analyst Thomas Maul. "We continue to recommend the Novartis shares as a 'Buy' and a defensive long-term investment." Novartis is also seen as a sound investment due to its diversified business and promising portfolio of new drugs, qualities which mean it trades at a premium to GlaxoSmithKline and France's Sanofi-Aventis, Europe's two largest drugmakers. It underlined its solid business, saying it had no equity or bond investment exposure to any insolvent financial institution and saw minimal impact from the crisis on its treasury operations. But just like other pharma companies, Novartis also faces looming threats to its business like copy-cat competition and more difficulties getting new products to market. Third-quarter sales were $10.75 billion. The figures were helped by comparisons with a weak year-ago quarter, when Novartis was hit by generic competition with products like blood pressure tablet Lotrel and herpes treatment Famvir, as well as the withdrawal of bowel drug Zelnorm in the U.S. ■

Astrazeneca Wins Bar on Generic

AstraZeneca said it had been granted a temporary U.S. court order suspending sales of a generic version of its asthma drug Pulmicort by rival Teva. Under the ruling, AstraZeneca and partner Par Pharmaceuticals will also suspend sales of their generic version of Pulmicort. The restraining order remains in force until further order of the court. A full court case is due to start on Jan. 12. AstraZeneca warned its full-year earnings would be at the lower end of its previously stated range as a result of the launch of generic Pulmicort, hammering its shares. In other news, AstraZeneca said it would cut 1,400 jobs in the coming years as it revamped its packaging operations. The staff cuts would be carried out through to 2013 after local negotiations. Its forecast of restructuring costs remained unchanged for 2008 and would be updated in connection with the group's full-year results were presented in January, it added. ■

Global Pharma Market Sales Exceeding $820 Billion

The global pharmaceutical market is expected to grow 4.5–5.5% next year, a pace similar to 2008, according to the IMS Global Pharmaceutical and Therapy Forecast released by IMS Health. The forecast predicts global pharmaceutical sales to surpass $820 billion in 2009, reflecting sustained double-digit growth in key emerging countries tempered by a slower pace in more established markets. This includes the U.S., where growth is expected to be in the 12% range for both 2008 and 2009. "In many respects, 2009 will reflect the new shape of the global pharmaceutical market, the result of market factors that have gained momentum over the past several years," said Murray Aitken, senior vice president, Healthcare Insight, IMS. "Pharmaceutical growth next year will hold steady at 2008 levels. The market will continue to contend with a number of forces – among them, the shift in growth from developed countries to emerging ones, specialist-driven products playing a larger role, blockbuster drugs losing patent protection, and the rising influence of regulators and payers on healthcare decisions. Layered on top is the uncertainty in the global economic environment and its effect on demand." ■

Merck's Erbitux Gets Green Light

A committee of experts advising the European Commission said it backed Merck KGaA's Erbitux drug for a second use to combat head and neck cancer, bolstering its sales potential in the region. The Committee for Medicinal Products for Human Use (CHMP), whose assessments guide the Commission's drug approval decisions, recommended Erbitux as an initial treatment of recurrent or metastatic squamous-cell cancer of the head and neck in combination with platinum-based chemotherapy. A potential clearance would mark the second for the Erbitux injection in Europe to combat head and neck tumours as the drug is already cleared for use in combination with radiotherapy for locally advanced head and neck tumours since 2006. Erbitux was originally discovered by ImClone, which sold the marketing and development rights to the drug outside the U.S. and Canada to Merck. ImClone's Erbitux partner in North America is Bristol-Myers Squibb. Merck has said it expects full-year sales of Erbitux, based on the active ingredient cetuximab, to reach about €600 million in 2008 and to rise to blockbuster status in the next decade. ■

Ranbaxy Posts Quarterly Loss

Ranbaxy Laboratories recently reported a net loss for the September quarter due to problems in the U.S. market and foreign exchange losses due to a weaker rupee.

Ranbaxy, in which Japan's Daiichi Sankyo owns a controlling stake, has been marred by allegations that it sold misbranded or adulterated drugs in the U.S. The company has denied the allegations. The FDA has cited the company for failing to fix numerous record-keeping and other operational problems, and last month banned roughly 30 Ranbaxy-made generic drugs until the problems were resolved. Ranbaxy said it posted a consolidated net loss of INR3.95 billion ($80 million) in its fiscal 3Q, compared with a profit of INR2.07 billion reported a year earlier. Revenue rose 14% to INR18.88 billion. Parent Daiichi Sankyo, Japan's No. 3 drug maker, booked a lower profit in its first half and cut its annual operating outlook by 8%. ■

Elan Drops Plan to Sell Unit

Irish drugmaker Elan has dropped plans to sell its drug delivery unit due to global turmoil, the company said as it posted a slightly higher than expected 3Q loss. Elan said it had completed an evaluation of the strategic options for the separation of Elan Drug Technologies (EDT), adding a number of parties had expressed considerable interest. "Given the recent dislocation and uncertainty in the financial and credit markets, Elan has decided to retain the EDT business for the foreseeable future and to put in place structures to allow EDT to develop and grow as an independent wholly owned subsidiary of Elan," it said in a statement accompanying its results. Elan recorded a loss per share of 18 U.S. cents in the three months to the end of September versus a loss of 19 cents a year earlier and a 15.8 cent average loss expected by four analysts compiled by Reuters. Elan's total quarterly revenue rose 53% to $270.1 million, driven by sales of its multiple sclerosis drug Tysabri. That compared with analysts' estimates of $261 million. The company reiterated its full-year 2008 guidance target and said it was on track to record revenues approaching $1 billion and adjusted an EBITDA loss of less than $50 million. "Our target was to end this year break even on an EBITDA basis and that is something that we are still targeting to do," CFO Shane Cooke said. ■

Dr. Reddy's Q2 Net Drops 52%

Indian drug maker Dr. Reddy's Laboratories reported a worse-than-expected 52% drop in quarterly net profit on foreign exchange losses. The firm said consolidated net profit in the quarter ended Sept. 30 fell to INR1.21 billion ($24.3 million) from 2.53 billion a year earlier under international financial reporting standards. The company said it had made foreign exchange losses of INR296 million in the September quarter, compared with a gain of 259 million in the same period a year ago. Analysts said the losses were due to hedges taken at higher rupee levels and its foreign debt. Profit in the September quarter of the previous year was also helped by tax writeback of INR1.51 billion, the company said in a statement. Revenue rose 30% to INR16.15 billion from 12.45 billion. Under Indian accounting standards, net profit fell to INR866.4 million from 1.1 billion, the company said. Global demand for generic drugs produced by firms such as Dr. Reddy's and local rival Ranbaxy Laboratories is booming as nations around the world battle rising healthcare costs. But export-driven Indian companies are facing stiff pricing pressure as more drug makers enter into the generics space. ■


John Patterson

Anders Ekblom

New Head of AstraZeneca's Drug Development Anders Ekblom, 54, will resume full management responsibility for the development organization at the end of January. He joined Astra in 1993 from Sweden's Karolinska Institute and is currently vice president and head of global clinical development. Ekblom's predecessor, John Patterson, is to retire from the board of the Anglo-Swedish company next March. ■


John van Osch

Gary Pruitt

Univar Names Group Senior Vice President Univar announced that it has appointed John van Osch as Group Senior Vice President – Europe, effective Jan. 1, reporting to Gary Pruitt, Univar President and CEO. Currently, Mr. van Osch is President and General Manager of DSM Composite Resins in Schaffhausen, Switzerland. Prior to joining DSM in 2006, he enjoyed a career of nearly 20 years with General Electric, primarily with GE Plastics. ■


Brad Nutter

Brian Concannon

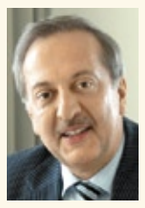
Haemonetics Promotes Brian Concannon to CEO Haemonetics announced that, Brian Concannon will be promoted to the position of President and CEO effective in April, succeeding Brad Nutter in this role. Brian will also join the Haemonetics Board of Directors at that time. Brad Nutter will continue as Chairman and CEO until April 2009 and thereafter will remain an employee of the Company as Executive Chairman of the Haemonetics Board of Directors. ■

Dyax Announces CEO Transition Plan Zyax announced that Gustav A. Christensen, who joined Dyax as Executive Vice President and Chief Business Officer in April 2007, will succeed Henry E. Blair as President and Chief Executive Officer on January 1. Blair, who co-founded Dyax in 1989 and has served as Chairman, President and Chief Executive Officer since 1995, will retire and become Chairman of the Board after transitioning his executive role to Christensen. ■

Braskem names Bernardo Gradin as CEO Braskem said it has named Bernardo Gradin chief executive officer. Gradin previously served as the vice president of the company's vinyls and basic petrochemicals divisions. He succeeds Jose Carlos Grubisich, who is becoming the chief executive officer of ETH Bioenergia. ■


Hans ten Cate

Dow Corning Names Global Marketing Manager for Solar Business Hans ten Cate has been named global marketing manager of the Dow Corning Solar Market business unit. Based at Dow Corning's European headquarters in Belgium, he is responsible for defining and leading the implementation of marketing and brand management strategies. Cate joined Dow Corning in 1990 in the company's Construction Industry, then moved to marketing roles in Process Industries and Life Sciences, where he took a global market leader role in Household Cleaning products as well as European Commercial Management. ■


Werner Fuhrmann

Chairman of Euro Chlor Named Werner Fuhrmann, president of AkzoNobel Base Chemicals, has been named Chairman of Euro Chlor, the Brussels-based organization representing the European Chlor-Alkali industry. Fuhrmann succeeds Michael Winhold (Vinnolit). Fuhrmann has been a member of the management committee of Euro Chlor (Cefic) since mid 2005 and was elected vice chairman of the VNCI, the Dutch Chemical Industry Association in June 2007. ■

Becton, Dickinson and Co. Names New CFO Becton Dickinson & Co. has announced the appointment of David V. Elkins as executive vice president and chief financial officer, effective Dec.1. ■

Kemira's Erkki Järvinen Appointed CEO of Tikkurila Erkki Järvinen has been appointed President and CEO of Tikkurila Oy. Currently, he is President and CEO of Rautakirja Corporation, which belongs to Sanoma Oyj. Järvinen will take his new position during the first quarter of 2009. ■

Huntsman Win Top Prize at IChemE

Huntsman Pigments Division clinched the top prize at the Institution of Chemical Engineers (IChemE) 2008 Innovation and Excellence Awards in Birmingham, UK. The Huntsman team won the Entec medal for creating Deltio – a free-flowing chemical form of Titanium dioxide (TiO_2). Deltio is an effective form of titanium dioxide, without the handling and poor flow properties commonly associated with TiO_2. The new product has already been scaled-up to industrial levels. Almost 500 chemical engineers attended the 15th annual awards dinner, staged at the Hilton Metropole Hotel, Birmingham. IChemE Chief Executive, David Brown described the evening as an overwhelming success: "The event showcased the diversity of the chemical engineering community. With international shortlists and winning entries from all over the world, it was truly a night to remember." Other winners included Shell Global Solutions (Sellafield Engineering Excellence award); BP Alternative Energy (SRG Food & Drink Engineering Innovation Award); Arvia Technology (IChemE Water Award); Jacobs Engineering UK (Shell Energy Award); the National Nuclear Laboratory (HFL Risk Health & Safety Excellence Award); and Faculdade de Engenharia da Universidade do Porto (ABB Consulting Sustainable Technology Award). ■

Davos 2009 Offers Opportunity to "Reshape the Post-Crisis World"

Against a background of economic uncertainty and global crisis, the World Economic Forum has announced record engagement from business, government and other leaders for the World Economic Forum Annual Meeting 2009 in January in Davos, Switzerland. More than 20 heads of state/government, including G8 countries, and close to 1,000 business leaders have already confirmed their participation, demonstrating the need for governments and business to sit together and focus on an agenda to restore sustained economic growth. Among the highlights, Prime Minister Vladimir Putin of the Russian Federation has confirmed his participation and will address the opening of the Meeting.

"Together with a carefully crafted and refocused programme for the Annual Meeting, participants will have an historic opportunity to tackle the key issues facing the world at the moment," said Professor Klaus Schwab, Founder and Executive Chairman of the World Economic Forum. "The record level of Annual Meeting registrations, both in terms of quality of the participants and the numbers, shows the desire for us to collectively deal with the broader problems facing us all. It reflects the growing need for a multistakeholder and systematic view of the major economic, political, societal and technological changes that lie ahead in 2009."

▶ www.weforum.org

Innovation Prize For KSB

KSB is one of the three prize winners of the "Best Innovator 2008" competition, which management consultants A.T. Kearney organized together with the journal Wirtschaftswoche. On behalf of KSB, Professor Dieter-Heinz Hellmann, member of the Management Board at KSB, and Dr. Andreas Kühl, Head of Development Process/Variants Management, accepted the prize at the German Federal Ministry of Economics and Technology in Berlin on Nov. 13.

The distinction was awarded in this year's special category of "Complexity Management". It acknowledges the capacity to manufacture a very large number of products in various designs, sizes and materials with a comparatively low level of internal effort. KSB's very varied portfolio extends from domestic rainwater harvesting systems via process pumps to boiler feed units for large power plants. The "high level of transparency regarding costs and value per product" was also a reason for the jury to award the company. The other prize winners are Volkswagen (overall winner as "Best Innovator") and Rational (winner in the category of "Innovative German Small and Medium-sized Enterprises"). ■

EVENTS

Oil & Gas Maintenance Technology 2009 The Gulf's premier forum for oil & gas maintenance and reliability technologies takes places Jan. 19–21 in Bahrain. More than 1,500 are expected to join the discussion of the very latest solutions for the maintenance and reliability industry. Held simultaneously, the exhibition will showcase technologies and products displayed by dozens of exhibiting companies. The event will draw visitors to the show floor to network with leading suppliers, consultants and service providers. The conference will offer sessions on the latest industry hot topics including predictive and preventive maintenance, reliability and asset management and maintenance management as well as examining issues centered on the fitness for purpose question of oil and natural gas transmission lines. From vibration analysis to corrosion control to contracting practices, the program will address maintenance and inspection issues affecting tanks, compressors, rotating equipment, pipelines, gas plants, refineries, instrumentation and more. Besides other speakers, Professor Dimitrios Kalaitzis and Dr. Walter Hahn from Dr. Kalaitzis & Partner will report on "Conceptual Design, Sustainable Successful Maintenance." ■

5th Annual CEE Chemical and Petrochemical Forum Jacob Fleming's Central and Eastern Europe (CEE) chemical and petrochemical forum will take place in Budapest Jan. 22–23 for the 5th time. EU enlargement, emergence and growth of regional domestic markets, investments from multinational western players etc. force local CEE companies to change and adapt their business activities to remain competitive. Participants will have the chance to benefit from first hand experiences of companies who have successfully adapted their business strategies. Moreover, conference goers will examine current market trends, areas for future growth and reflect of the recent market developments.

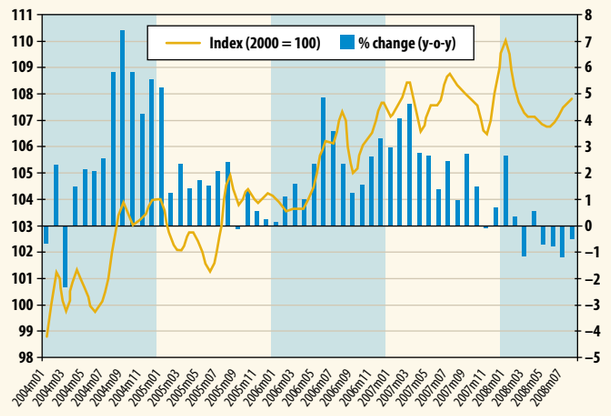
▶ www.jacobfleming.com

Informex 2009 As the premier networking event for the chemical industry in the U.S., InformexUSA is designed to showcase the chemistry capabilities of high-value, high-quality businesses. Moreover, the event – that takes place Jan. 27–30 in San Francisco, Calif. – brings together buyers and sellers from a broad range of fine, specialty and custom chemical applications. For the 25th time, chemical educational forums, exhibitor showcase presentations plus topical round table discussions make Informex a very important event for exchanging critical, high-value information within the fine and specialty chemical industry. Participants enjoy the possibility to find new customers and suppliers, evaluate current outsourcing projects and discover new applications for chemistry technology. New activities of the 2009 event include a pavilion and forum for green chemistry, a biotechnology day and a breakfast briefing entitled "Reach Pre-registration is over. What do I do now?"

▶ www.informex.com

Chemical Market

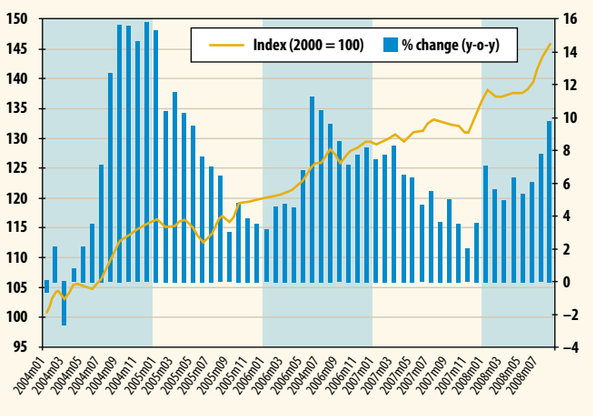
Chemical Production



Source: Eurostat © GIT VERLAG

Output in the EU chemical industry (excluding pharmaceuticals) decreased by 0.5% in August 2008 in a year-on-year comparison. Moreover, when considering the first eight months of 2008, output in the EU chemicals industry (excluding pharmaceuticals) experienced a decline of 0.1% compared to the same period of 2007. Petrochemicals grew by 0.9%. Polymers, consumer chemicals and pharmaceuticals registered relatively no growth. With a decline of 3.1%, specialty chemicals registered the biggest drop.

Chemical Sales

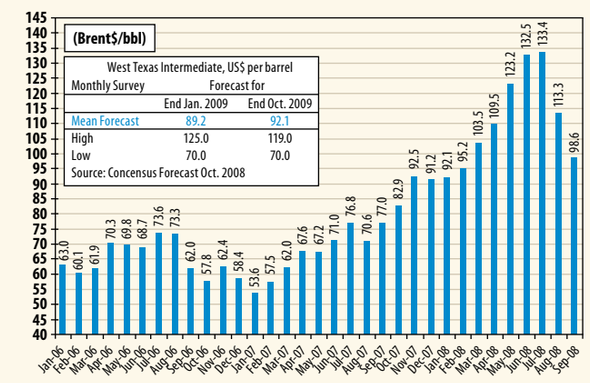


Source: Eurostat © GIT VERLAG

Comparing the first eight months of 2008 to the same period of 2007, chemical sales (excluding pharmaceuticals) grew by 6.6%. In a year-on-year comparison, the growth rate of August 2008 was 9.8% higher compared to August of last year, confirming the continuing rising trend.

Oil Prices

Oil Prices

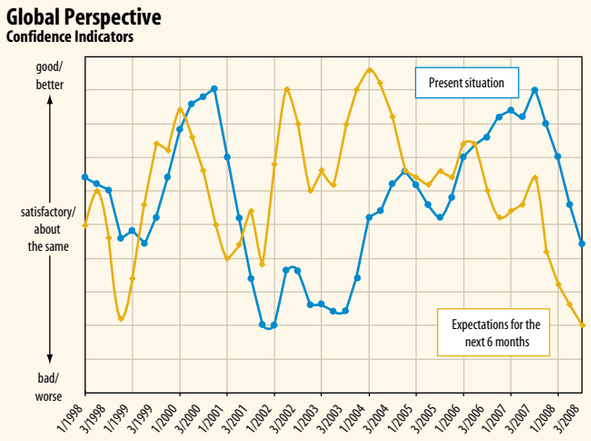


Source: INSEE (Institut national de la statistique et des études économiques, Paris) © GIT VERLAG

Oil prices are following a downward trend. According to the opinion of analysts and the latest Consensus Forecast (October 2008), the likelihood of recession in the oil-exporting countries, in conjunction with fears that the credit crisis is damaging energy demand, has placed downward pressure on prices.

Global Perspective

Global Perspective
Confidence Indicators

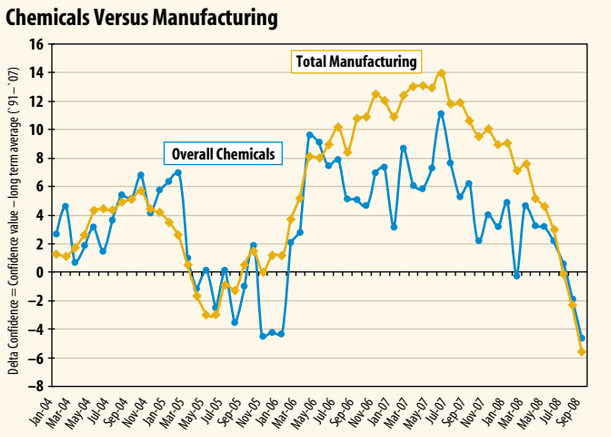


Source: IFO World Economic Survey, Net balance of replies © GIT VERLAG

According to the latest results of the Ifo World Economic Survey (WES), the world economic climate has worsened in the third quarter of 2008 for the fourth time in succession. The decline is primarily the result of more unfavourable assessments of the current economic situation, but also the expectations for the coming six months have been revised downwards.

Confidence Indicators

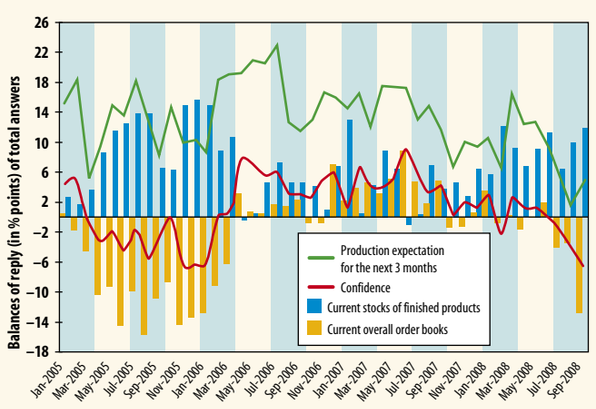
Chemicals Versus Manufacturing



Source: European Commission © GIT VERLAG

The overall chemicals confidence indicator for the EU declined in September. Business confidence in the manufacturing sector suffered a much bigger drop (3.3 points) than chemicals. The downward trend in the product expectations for the coming months was the determining factor impacting the decline in confidence in the manufacturing sector.

Chemicals



Source: European Commission © GIT VERLAG

The decline in the chemicals industry indicator was fairly sharp for managers' assessment of production trend observed in recent months, total order books and export order books; while their assessment of stocks of finished products worsened only slightly and production expectation registered a slight improvement.

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Focus in CHEManager Europe 01/2009

The current financial crisis has everyone on their toes looking for ways to minimize the global impact. The World Economic Forum's Annual Meeting, at the end of January, offers a platform for leaders to discuss and shape the global agenda. CHEManager Europe issue 01/2009, which will be available at this important event, will have lots of Pre-WEF Annual Meeting coverage. Read interviews with industry leaders like Klaus Endress, CEO of Endress+Hauser, and Hariolf Kottmann, CEO of Clariant, and discover their perspective of the global situation and what industry must achieve. Receive the consultants' input on vital topics such as global competitiveness, sustainability, economic slowdown, energy security, demographic shifts and the skills gap.

Another high-ranking event in focus for the next issue is the InformexUSA 2009. At the end of January, buyers and sellers of the chemical industry are going to meet in San Francisco. CHEManager Europe is talking to the exhibitors and asking about the highlights they are going to present at the setup. Dr. Beate Ehle, President of BASF's Intermediates division, Dr. Peter Seufer-Wasserthal, VP Pharmaceutical Services of Codexis and other representatives of the chemical industry talk about their expectations of the event, goals of their company and main trends in the chemical sector for 2009. ■

This issue may contain a supplement from Siemens.

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