



Stockbyte

Looking into the future

The message from *Informex 2005* in Las Vegas was that the future economy will belong to life sciences but for the present consolidation seems the safest strategy, writes *Rob Winder*

In Brief

- In the next five years life sciences are predicted to overtake IT in terms of innovation
- Good news for fine chemicals custom manufacturing hit by competition from Asia
- 2005 will still be a tough year as drug withdrawals take their toll
- Some custom manufacturers plan to expand and address Asian challenges

Fortunately for the attendees of *Informex*, the Synthetic Organic Chemical Manufacturers Association's annual trade show, in Las Vegas, Nevada, in mid-January, the future economy will belong to life sciences. At least that is according to the founder of the Institute for Global Futures, James Canton, speaking in his keynote presentation.

Canton says that innovation is the key to shaping future markets and is essential if companies are to have a competitive advantage. Currently, one third of the global economy is innovation driven, he says, mostly based on

information technology (IT), but with life sciences contributing too. But in the next five to eight years, life sciences will overtake IT. Canton forecasts that the economy will be two thirds based on innovation, and 70% of this will be life science-based.

These predictions are based on Canton's belief that healthcare will be driven by the ageing of the 'boomer generation'. This generation has the largest concentration of global wealth and their desire for vitality is driving healthcare — not just for medicines to cure disease but also for lifestyle products to improve well-being.

The innovation that drives this change will require companies to think differently. It is most likely that products and ideas at the periphery of their current business will generate an incredible amount of wealth and maximise return on investment, says Canton. He believes that chemistry will be at the core of this transformation.

This reinvigoration of the life sciences sector is much needed by a fine chemicals custom-manufacturing sector that has been severely hit in recent years by competition from lower-cost economies in Asia, low approval rates of new drugs, overcapacity in standard large-scale manufacturing and insourcing by the pharmaceuticals industry. The pharmaceuticals industry — the main customers of *Informex* exhibitors — is also under pressure as a result of low R&D productivity, price pressure, competition from generic products, increased regulatory pressure and cost containment.

This year's *Informex* event attracted more than 4100 attendees and 478 exhibiting companies. Event chairman Nick Shackley says these numbers are consistent with the numbers for 2004, despite the difficult economic environment. Peter Nagler, departing head of Degussa's Exclusive Synthesis and Catalysts business unit, describes 2004 as a flat year with little sign of a turnaround. 'We did not see the signs of improvement we expected,' he adds.

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Joseph Colleluori, vice-president for marketing and strategic development for Lonza in the US, believes 2005 will be just as difficult as 2004 for this sector. He does not think the industry has fully realised the impact of the withdrawal of drugs, such as *Vioxx*, and

that could take a further three to six months. Colleluori thinks the main effect could be even more insourcing by the pharmaceuticals companies as they find increased production volumes are available in-house.

Consolidation

Colleluori expects 2005 will finally see the consolidation and closures that the custom-manufacturing sector desperately needs. But he thinks that Lonza is well positioned to take advantage of market adjustments and secure additional business.

Despite these tough times for the fine chemicals custom manufacturers, several companies exhibiting at *Informex* announced plans to expand their businesses, and to address the challenges from Asian manufacturers and the opportunities of biotechnology.

Sigma-Aldrich announced an agreement to acquire the JRH Biosciences division of CSL for \$370m. JRH supplies cell culture and sera products to the biopharmaceuticals industry. Sigma-Aldrich will acquire JRH's facilities in Scotland, UK, Australia and in Kansas and Pennsylvania in the US. Once the acquisition is completed JRH will become part of Sigma-Aldrich's fine chemicals business. SAFC, says Frank Wicks, president of SAFC.

This acquisition is just one part of SAFC's expansion programme.

Recently, SAFC has broken ground for a doubling of its high-potency active pharmaceutical ingredient (API) manufacturing capabilities in Madison, Wisconsin; a €9m (\$11.5m) pilot plant, with three times the capacity of the older one it is replacing, was completed

Biodiesel

Informex was not only about supply for the pharmaceuticals industry. Dow Haltermann Custom Processing will produce biodiesel for World Energy.

The biodiesel will be produced at Dow's Houston, Texas, facility using a batch process. Currently, Dow is working to develop a continuous process for use at its Kallo facility near Antwerp, Belgium, says Ian Stark, commercial director for Dow Haltermann in Europe. Dow's process can use feedstocks with a high acid value and convert them to biodiesel. In the process triglycerides are esterified or transesterified with methanol.

Simon Uppill-Brown, general manager of Dow Haltermann says there are several environmental advantages to biodiesel compared with petroleum diesel. According to a study by the US Department of Energy and the US Department of Agriculture, carbon monoxide emissions are reduced by 78% when biodiesel is used in preference to petroleum diesel. Additionally, particulate emissions are also reduced, says Uppill-Brown.

World Energy has its own small-scale production facility, but wanted to be able to reinforce its leadership position in the market and to meet future needs.

in late 2004 in Steinheim, Germany; and a \$150 000 simulated moving bed facility was installed at its Buchs, Switzerland, site.

SAFC is planning further enhancements to its business, says Wicks. 'SAFC is likely to invest in a larger-scale facility in the near future,' he says. 'We would like to be able to take more projects further with our customers than we can do currently at our facility in Gillingham, UK.'

Avecia has confirmed it will spin out its pharmaceutical technologies (*C&I* 2003, 22, 18). The new company, Reaxa, will be formally launched before the end of quarter one this year, says Pete Jackson, vice president of Avecia's pharmaceuticals business, who will also serve as chief executive for Reaxa.

Reaxa will be a joint venture between Avecia, Steven Ley, professor of chemistry at Cambridge University, UK, and the Reaxa management team. Reaxa will be funded by \$1m from private individuals in the UK, with additional funding from three or four small institutions in the North of England, says Jackson.

Reaxa's technology portfolio will include the *EnCat* encapsulated transition-metal catalysts, the *QuadraPure*

metal-scavenging resins and the *Quadragel* synthesis support resins. The technology pipeline includes extensions of the current products including a nanoparticulate palladium *EnCat* and an osmium tetroxide-based *EnCat*.

Jackson says the turnover in the year from July 2004 will be \$1m, and he expects income to increase to \$20m by 2009.

Avecia was sold by AstraZeneca in 1999 to equity investors Cinven and InvestCorp. Almost six years later, Jackson says that he would not be surprised if the investors were looking for an exit strategy within the next 18 months.

Albany Molecular Research expects to begin operations at its newly established, wholly owned subsidiary Albany Molecular Research Singapore Research Centre in the first quarter of 2005. The facility will be Albany's first outside the US. Albany aims to provide a full range of fee-for-service chemistry technologies, including medicinal and combinatorial chemistry, process research and scale-up chemistry, analytical services and current good manufacturing practice manufacture of APIs.

Strategy

Albany's chairman, president and chief executive officer, Thomas D'Ambra, described the move as Albany's 'first step in a strategic move to globalise our services platform'. He expects the Singapore operation will allow Albany to address new markets in areas with burgeoning biotechnology and pharmaceuticals industries — such as Japan, Australia and the Pacific Rim. Albany will be spending \$3–5m on the Singapore facility during 2005.

The company is considering further research centres in the near future, with India the most likely location.

Degussa also announced developments in Asia. The exclusive synthesis and catalysts business unit will establish an R&D laboratory near Mumbai, India, this spring, says Nagler.

The \$1m first phase of the development will include analytical and kilolab equipment. Nagler says Degussa chose India as it has a good business environment and well-trained people. But, he was cautious about intellectual property and suggested that some of Degussa's latest technologies may not be available from the Mumbai centre.

This is expected to be the first step for Degussa's fine chemicals business in Asia. Nagler expects that Degussa

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will be looking to establish production facilities in India or China to compete with low-cost manufacturers in those countries.

New technology

Degussa also announced some new technology capabilities at *Informex*. It has introduced a whole-cell biocatalyst system for reductive amination that includes *in-vitro* cofactor regeneration. Oliver May, general manager of Degussa's biocatalysis service centre, says the technology is designed to reduce process costs and increase efficiency, to make it easier to compete with lower-cost economies.

Degussa has also developed an automated process-development system. Alfred — advanced level fast reaction engineering device — allows Degussa to test a wide range of chemistries at close to process conditions, says Rudolf Hanko, vice-president of the exclusive synthesis business line. Alfred, which has eight parallel reactor units, is being used on existing projects as well as new requests to achieve

the lowest cost reaction conditions.

Wacker-Chemie has acquired Jena, Germany-based biotech company ProThera. The acquisition expands Wacker's pharmaceuticals custom-manufacturing activities by adding contract development and manufacture of proteins. According to Gerhard Schmid, president of Wacker Fine Chemicals, the recently formed fine chemicals and biotechnology division of Wacker, the ProThera acquisition includes a pilot-scale biologics manufacturing plant. He says Wacker is looking to expand capacity in the near future, but this will depend on the success of its projects. The ProThera capabilities are in microbial manufacturing, which Schmid sees as being an interesting market segment for Wacker as currently there are fewer players there.

One company new to *Informex* was Roche Colorado of Boulder, Colorado. The company, founded in 1946 as Arapahoe Chemicals that became part of Roche in 1994, is now opening its peptide production and product development facilities for contract manufacturing, says Georg Wiebecke, president of Roche Colorado.

Wiebecke believes Roche Colorado proved its capabilities in the development and scale-up of the production of *Fuzeon*, Roche's anti-HIV drug, which is a 36 amino-acid peptide. The *Fuzeon* molecule is widely considered to be the most complex drug ever chemically synthesised at the multi-tonne scale.

Wiebecke says that chemical synthesis of peptides is often cheaper and can be brought to market sooner than alternative technologies.

Recently, Roche Colorado expanded its peptide-production capacity through debottlenecking its projects and the implementation of process improvements.

- In 2006, *Informex* will return to New Orleans, Louisiana, from 21–24 February.

Spin out: Avecia is launching Reaxa this year as a spin-out of its pharmaceutical technologies

