Low-cost operation key to survival

With the downturn likely to be deep and prolonged, it is vital for chemical manufacturers to squeeze the most out of their businesses

Consultant's corner

PAUL HODGES
INTERNATIONAL ECHEM

TWO MAJOR changes are underway in world feedstock markets. The first is a dramatic expansion in low-cost olefins production in the Middle East. The second is an increase in refinery capacities in Asia, the Middle East and the US. These changes will create a significant challenge for petrochemical and polymer producers.

Steam cracker operators are already facing the worst conditions in 25 years, as a result of the downturn in demand. Over the next few years, however, their operating rates will come under further pressure. Ethylene capacity in the Middle East, largely based on low-cost ethane, will more than double from 14m tonnes in 2006, to 32m tonnes in 2013. Propylene capacity is also expected to increase, from 3m tonnes to 13m tonnes over the same period.

REFINING THE REFINERY STREAM

In the refining area, capacity will also be rising, by up to 12m bbl/day. This is a double-edged sword, however. On the one hand, it means that the recent period of tight gasoline markets is unlikely to return. But unfortunately, many of the new refineries are also planning to produce propylene, benzene and paraxylene (PX). This means that while petrochemical producers will no longer have to bid away their naphtha feedstock from the gasoline market, they will also face more competition in these building block product areas.

We analyzed the likely impact of this increased capacity in detail in our Feedstocks for Profit study last year (see *ICIS Chemical Business*, August 18-24, 2008). And since then, it has become clear that our fears of a global downturn are going to be realized. This makes it doubly important that producers now focus on strategies and management structures that will enable them to survive the next few years. The priority has to be the achievement of a truly low-cost position.

This will probably be the single most important strategy to follow. In recent years, some companies have undertaken opportunistic acquisitions around the world, based on a belief that their superior management skills would enable them to improve a site's competitiveness by reducing its fixed costs. And this model clearly worked during the boom times, when demand was strong and higher-cost producers provided a pricing cushion.

MARGINS UNDER PRESSURE

It is unlikely to prove so successful in the future, however. Margins are already under pressure as the market moves from stand-alone to roll-through pricing. A focus on a minimum number of well integrated sites in key regions will therefore be critical. Plant and site optimization models will also be key to ensuring that the right operational decisions are made day in and day out. Targeted investment in increasing plant flexibility will also pay dividends, to enable sites to routinely achieve the lowest possible variable costs.

A number of leading companies already provide striking examples of this strategy in action. Germany-based BASF's commitment to its "Verbund" operational model is well known. Equally, as Michael Dolan, then president of US major ExxonMobil Chemical, noted in 2007, "Our strategy is to upgrade every molecule to the highest value. We make sure we do integration better than anyone else. We work relent-

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lessly to mine those synergies, and make sure there are no fences between operations."

And Allen Kirkley, vice president of global major Shell Chemicals, highlighted last year that a focus on "oil-chemical integration is a key tenet of Shell's downstream strategy, which we believe helps differentiate us from our competition." He added that this strategy had led Shell to invest in hydrocarbon integration "in a coordinated way across our integrated refining-chemical locations," as well as in developing "advanced optimization tools."

INTEGRATED MANAGEMENT

As always, it will be essential to have a management structure that reflects the chosen strategy for the business. Companies need to avoid the trap of assuming that management changes on their own will make the difference. Our view, based on bitter experience, is that this is the equivalent of shuffling the deckchairs on the *Titanic*.

> **"Oil-chemical integration is a key tenet of Shell's downstream strategy"**
> **Allen Kirkley**, vice president, Shell Chemicals

Instead, we believe that boards need to focus on removing as many internal boundaries as possible within the organization. The rationale for this suggestion is that these boundaries lead to a loss of management energy and direction during periods of major change. Performance metrics can too easily become internally focused, with the aim being to outperform versus other units, rather than on responding to external drivers.

"Enterprise first" will be a good motto for the next few years, as companies need to encourage managers to work together, rather than pursue their own agendas. Boards will need to develop mechanisms that reward managers for achieving the best possible result for their company, even if this means their own area suffers as a result.

This approach will represent a significant change for many companies, who have sought in recent years to develop more individual accountability for performance. As a business model, this has been very powerful in enabling rapid change to take place within formerly struggling business or functional organizations. But like all organizational structures, it needs to change once the overall business strategy begins to change.

These areas may also require major change in some companies that have built up or acquired a network of sites to serve local markets. During boom conditions, customers have valued the just-in-time facility that this model has enabled. But as Peter Huntsman, president and CEO of US-based producer Huntsman, told ICIS news in February, the focus has now switched, and instead "customers are ordering what they need to survive."

With margins under pressure, it will become increasingly difficult to justify having a number of subscale plants all producing similar products for their own local markets. Companies will instead need to develop a manufacturing strategy that focuses on a smaller number of sites, preferably on a coast or major waterway, and with good logistics. Similarly, it will be essential to operate a commercial strategy that provides them with global reach, so they can optimize local sales and purchases in relation to the markets that offer the best returns.

TECHNOLOGY

Companies will also need to make some hard decisions about their technology position. Many older, inefficient plants survived during the boom period, as margins were high enough to cover their higher costs of operations. But managers will find it increasingly difficult to operate them profitably with margins under continuous pressure. Far-sighted boards will instead look to invest in more modern technology, to give themselves a sustainable competitive advantage for the future.

LEADERSHIP

The next few years are likely to be very difficult. Overcapacity and weak demand will represent formidable challenges. Closure of unwanted plants is likely to come slowly, due to high exit costs and political barriers. Managers with leadership skills will therefore be in high demand. They will be a critical resource for companies that aim to achieve the genuinely low-cost position that will be essential for surviving the next few years. ■

» Paul Hodges is chairman of International eChem, adviser to the chemical industry and its financial community. He also writes the ICIS Chemicals and the Economy blog. Visit **www.icis.com/blogs/chemicals-and-the-economy**

Plasticizers
Dibutyl Maleate
DIBM, DMM, DEM, DOM
DBP, DIBP, DEP, DPHP
Dibutyl Sebacate
Chlorinated Paraffins

2-Ethylhexanol
2-Ethylhexanoic Acid
Benzoic Acid
Dicyandiamide
Maleic Anhydride
Neopentyl Glycol
Trimethylolpropane

Diisopropyl Ether
Epichlorohydrin
Thiourea Dioxide
Triethylamine

Pentaerythritol 98% / 88%
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neuchem inc
T: (415) 202-0778
F: (415) 358-4269
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