Future of chemicals II

Middle East challenges
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As the current economic crisis reshapes chemical industry dynamics, nowhere will the transformation be more evident in the next three to five years than in the rise of Middle East chemical companies and their impact on established players in western Europe and North America.

As they have been doing recently, chemical companies based in the Middle East will continue to focus on producing basic chemicals and polymers primarily to leverage their regional feedstock advantage in oil and gas and to gain from the growing need for these products in nearby Asian markets. However, as gas and oil prices rise and as the drive to create more jobs and add more value in Middle East industries escalates, these companies will likely move downstream into performance and specialty segments. Until now, challenging portfolio dynamics, complex supply chains, and somewhat unwieldy manufacturing and sales requirements have made specialty chemicals a difficult option for less established companies. But the ongoing commoditization of specialty chemicals and the advent of new business models will change this situation.

Clearly, Middle East companies will present a significant challenge for Western chemical businesses in the near and long terms and will no doubt be pivotal in forging a new outlook for the global chemical industry. In this second in a series of Perspectives about the future of the chemical industry, we discuss how established chemical companies can more than hold their own among these new realities by comprehending well the nature of this fresh competitive landscape and taking a series of steps to minimize its impact.
Typically, four key arguments are made to support the “sunset/decline scenario” that the European and North American companies will not be able to fend off the challenge of the Middle East upstarts.

- **Unfavorable cost position**: European and North American companies have a sizable, structural, and long-term cost disadvantage in polymers when competing with Middle East companies, which have access to

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**Exhibit 1**

Middle East feedstock growth rates

*How quickly is the Middle East chemical industry growing?*

<table>
<thead>
<tr>
<th>Year</th>
<th>CAGR '02-'07</th>
<th>CAGR '07-'12</th>
<th>CAGR '02-'12</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>9.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>12.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>14.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>17.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>19.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>15.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>25.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>35.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>45.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>55.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>40.1%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Nexant/ChemSystems; Strategy& analysis
plentiful and inexpensive resources. In fact, for gas-based feedstocks ethane and LPG, Middle East producers have a cost advantage of as much as 30 and 90 percent, respectively. Going forward, Middle East players intend to leverage these cost advantages even more by further increasing their ethylene-based capacities (see Exhibit 1, page 4).

- **Decline in demand**: The demand for basic chemicals and polymers in traditional markets — such as plastic industries, construction materials, automotive, and appliance segments in Europe and North America, where Western companies are strong — will achieve neither the pre-crisis level nor an attractive growth rate in the coming years. Indeed, the recent sharp decrease in demand heightened by the recession will likely prove to be structural.

- **Fierce competition**: Polymer markets are increasingly global; therefore, additional capacity in the Middle East can be substituted for European and North American assets on a “one to one” basis.

- **Asian upswing**: Middle East chemical companies enjoy relatively favorable logistical access to fast-growing basic chemical markets in Asia. And as some Middle East companies achieve downstream integration and move into at least semi-specialty chemical production, they can eliminate any production in Europe and directly deliver polymers to customers in Asia.

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**Key points**

- Middle East companies already present a significant challenge for Western chemical businesses, and this challenge will be exacerbated in the future.

- Western players will need to significantly improve and secure their cost position to counter increasing Middle East competition.

- More emphasis on innovation will be required to preserve the current technological lead for Western companies.

- New manufacturing and supply chain setups will offer opportunities for both Middle East and Western outfits.
Valuable solutions

There is certainly cause for alarm for established Western chemical companies. The lucrative competitive landscape they enjoyed for many decades is changing rapidly, and there are no apparent easy answers. However, there are answers that may hint at steps that European and North American chemical companies can take to counter the four arguments made against their survival — and there are ways that the Middle East chemical industry could upgrade its performance to keep the pressure on its more established rivals.

• *Improve cost position:* To overcome the feedstock pricing disadvantage, Western basic chemical companies must optimize their performance and assets, seeking to cut costs liberally throughout their operations. They should leverage opportunities to break bottlenecks, identifying further performance improvement potential while increasing integration among assets and flexibly using feedstock alternatives. Operational excellence in all dimensions will become an absolute prerequisite for Western players to stay competitive at all.

For many companies, ongoing crisis-driven restructuring programs will serve as the nucleus for cost reductions, selected asset consolidation, and, even more important, “flexibilization” of the cost base. This can be achieved through, for example, reducing labor costs, outsourcing non-core activities, tight scrutiny of third-party spending, increasing working capital levels, network optimization, and smart capital expenditures. In addition, expected volatility in oil prices will offer significant opportunities for hedging and other market pricing strategies, which require sophisticated forecasting and tight supply chain management. These capabilities are already well advanced in Western companies and less so in Middle East players.
A unique and in-depth customer understanding supported by “smart customization” — an approach to segmenting customers and then aligning products, service levels, and processes to each customer segment — and long-term customer relationships can also increase the competitiveness of several traditional Western players. This is especially true given the regionally different customer needs in the polymer markets.

Alternatively there are attractive opportunities for reducing feedstock costs in the Middle East. Several European, Asian, and North American companies are already taking advantage of them by, among other things, creating partnerships with Middle East companies — a tack taken by plastics maker Borealis and other players.

- **Manage demand shifts**: The demand for base chemicals and polymers is indeed under pressure. After the recent crisis-driven “de-stocking” of the entire value chain, we expect that of the up to 40 percent volume decrease, roughly half will return rather soon, still leaving the industry with approximately 20 percent less volume than usual for the next couple of years. Consequently, it will be critical for Western chemical companies to identify the areas of “structural” volume decrease — which could be called “permanent,” at least for the foreseeable future — through a deep understanding of the customers. By determining customer demand development in different segments, Western companies can exit less desirable market sectors, shutter mediocre production facilities, and consolidate plants in customer industry segments or regional markets that are still lucrative though slowing. Many Middle East chemical suppliers have recently profited from this development and established significant footprints in Europe and North America. Over time, the supply-demand imbalance in Western countries should begin to dissipate as new factories are postponed and consolidation proceeds apace.

In addition, many petrochemical assets in Europe offer feedstock flexibility that only a few Middle East assets can match. Base chemical and polymer players with a global asset footprint can leverage the cost advantage in the Middle East and the flexibility in Western assets by realigning their portfolio-asset allocation. For example, a company could shift more commodity-type volume to the Middle East — as long as additional logistics costs can be compensated for — and increase specialty or region-specific products in Western assets.
• *Take advantage of innovation:* While Middle East players combine organic growth, joint venture-enabled diversification, and acquisitions to develop their petro- and base chemical businesses — often with a clear focus on purely increasing volume and capacity — less attention has been placed on developing sophisticated application technology, encouraging innovation, and advanced marketing. Indeed, several Middle East players just produce the polymer without any compounding steps and sell it via distributors. Further gains in technical skills and basic customer knowledge will be required for Middle East chemical companies to tailor their portfolio and selected service offerings to the precise needs of their customers. In a scenario where they would embark on increasing their portfolio and service offerings, polymer production without compounding might not be sufficient. Middle East companies with significant European presence (and thus a deeper knowledge of the more complex aspects of chemical production and marketing) have an obvious advantage in that respect.

• *Profit from Asian demand:* As the Middle East chemical industry clearly focuses on volume growth, Asia is a key customer region for polyethylene and polypropylene products. However, with respect to the capacity and share development in the coming years, Asia and the Middle East are both expanding production capacity rapidly — apparently to meet the same Asian demand growth — making global overcapacity almost inevitable and creating an outright supply glut if the recession slows global growth (*see Exhibit 2, next page*). Thus, Middle East asset utilization will be under pressure and Middle East companies will have to look for alternative outlets in the next years. Nevertheless, we expect that the Middle East will keep its focus on Asia during and after the crisis.
Exhibit 2
Asia and Middle East expand production capacity for polymers

Polyethylene capacity
(in millions of tons)

Polypropylene capacity
(in millions of tons)

Source: Nexant/ChemSystems; Strategy& analysis
As ominous as the competition from Middle East chemical companies is already, it could get worse for Western operators if these new rivals are successful in optimizing their asset networks and in developing global operating business models, which can in turn be the basis for attracting, developing, and retaining top talent. Indeed, the competitive dynamics will be greatly exacerbated if Middle East players continue to enter specialty chemical segments. Increasing downstream integration in specialties through strategic alliances, joint ventures, or acquisition of Western specialty players will provide Middle East companies with the opportunity to carefully select the most attractive segments that fit best with their current and future portfolios of products. In addition, the accelerated commoditization of specialty chemicals will further ease the successful downstream integration of Middle East players, as the business models for commoditized specialty portfolios are very similar to petrochemical business models.

In the short term, it is expected that Middle East companies will view the integration of ethylene- and propylene-based downstream products as a high priority, leveraging their feedstock advantage. But priorities will change as the availability of C3 and heavier petrochemical feedstock increases. With additional Middle East downstream integration, new manufacturing and supply chain concepts will also start to emerge. Innovative solutions will include starlike asset network configurations, which blend a manufacturing hub for raw materials or intermediate chemicals to leverage economies of scale with production facilities for subsequent chemical formulation steps located close to the customer. The optimization between central intermediate production and decentralized downstream processing will be decisive for competitive advantage. As a consequence, asset flexibility and optimum levels of integration will be redefined.

Of course, such new manufacturing concepts will offer opportunities for not only Middle East companies but Western chemical providers as well. Indeed, although clearly the base chemical and polymer industry is likely to become more difficult to navigate, European and North American companies need not cede it to the Middle East competition. To overcome
the new challengers in the middle term, however, Western chemical players must significantly step up their performance improvement and operational excellence programs, proactively engage in consolidation, and continue to invest in innovation where meaningful. Overall, we expect that the top tier of petro- and base chemical players will look significantly different in size and composition in 2020 than it does today. The attempt of Reliance to acquire LyondellBasel is one very prominent recent example for this consolidation trend.

Expected consolidation trends, the companies that will enjoy privileged positions at the top of the chemical industry, and the success factors that they will need to remain in the upper echelon will be explored in an upcoming Perspective in “The Future of Chemicals” series.

Resources

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