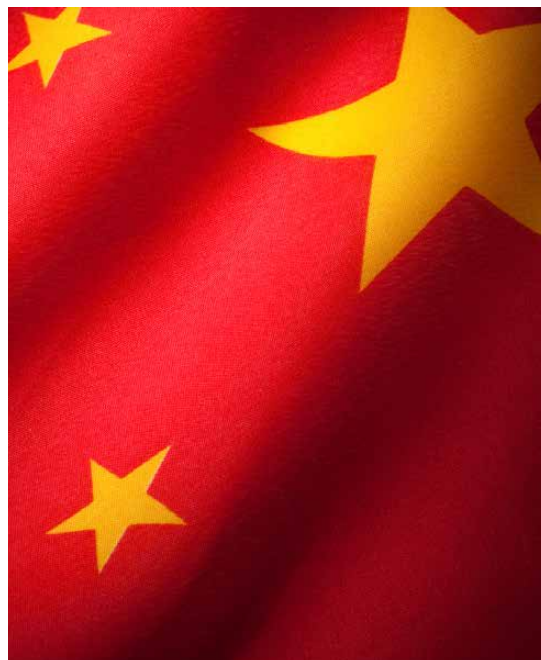


JUNE 2013



CHEMICALS PRACTICE

What's next for international chemical companies in China?

To drive further profitable growth in the increasingly competitive China market, international chemical companies should focus on five areas.

**Sheng Hong,
Nathan Liu, and
Thomas Luedi**

China's economic expansion has slowed, but the country remains the most important growth market for most—if not all—global chemical companies. International companies have a strong hand to play there. Not only will the country continue to be a major importer of commodity chemicals over the next decade, but international companies also have the more sophisticated products that will be needed in the coming stages of China's economic development. However, international companies also face new challenges. Chinese companies are increasingly trying to step out of low-profit commodity segments

and climb up the technology ladder to more sophisticated sectors, as well as enjoying many home-player advantages in the more competitive environment. In this article, we outline the moves that international players should make to continue to capture profitable growth opportunities in China.

Well placed in the world's prime growth market

Even though China's chemical-demand growth has slowed from the double-digit rates seen in the last decade, the country continues to offer

immense potential to international chemical companies (Exhibit 1). While international companies have been affected by the deceleration in China's rate of expansion in 2012, most remain optimistic about continuing growth prospects in the world's biggest chemical market, especially when compared with the outlook many see at home.

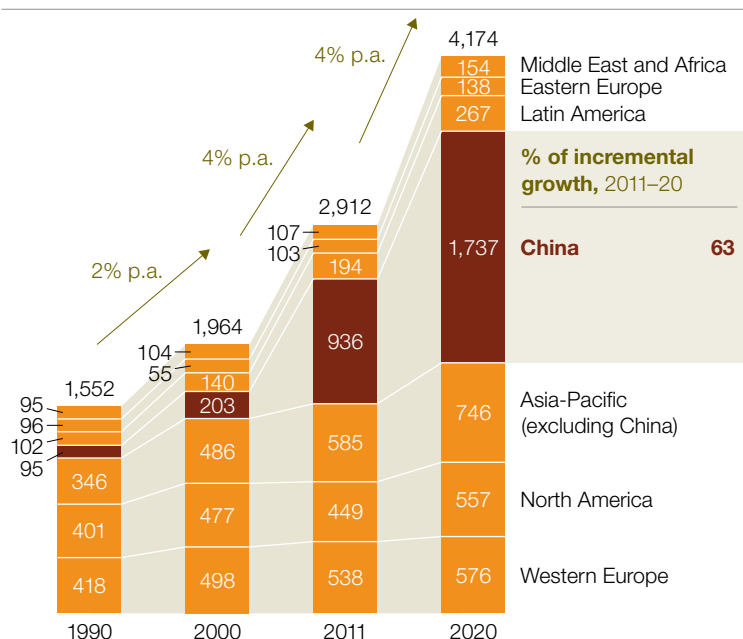
One testimony to the growth models that international companies have been employing in China is that these companies have by and large escaped the worst effects of the slowdown.

Different sectors of the chemical industry have shown very different levels of attractiveness (Exhibit 2). International companies have tended to be relatively selective about the segments they have chosen to participate in, and this has paid off. But for Chinese companies, the fast demand growth of the past decade has encouraged a wave of "me too" investments that, with the slowdown, have led to overcapacity not only in commodity sectors like methanol and polyvinyl chloride but even in some specialties sectors such as vitamins, depressing profitability.

Exhibit 1

China could account for ~60% of global demand growth from 2011 to 2020.

Chemical¹ market-size breakdown by geographic market,²
2010, real \$ billion



¹As defined by Global Insight under section D24, excluding D2423 (pharma: drugs and medicines) and D2424 (soap, cleaning, and cosmetics).

²Figures may not sum, because of rounding.

³Compound annual growth rate.

Source: IHS Global Insight; McKinsey analysis

Exhibit 2

Many chemical segments are not very attractive in China—choosing where to play is important.

■ Not attractive: overcapacity, fierce cost competition, generally low margin
 ■ Somewhat unattractive
 ■ Somewhat attractive
 ■ Attractive: good industry conduct, generally good margin

		Mid-stream	Downstream									
			Production	Automotive	Construction	Paints and coatings	Adhesives and sealants	Energy	Electronics	Apparel	Health care	Packaging
Coal based	Methanol		Not attractive	Somewhat unattractive	Somewhat attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive
	PVC ¹		Not attractive	Somewhat unattractive	Not attractive	Not attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Somewhat unattractive
Petro-chemical based	Polyethylene		Somewhat unattractive	Somewhat attractive	Somewhat attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive
	Polypropylene		Somewhat attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive
	PET ²		Not attractive	Somewhat unattractive	Somewhat attractive	Attractive	Attractive	Attractive	Attractive	Not attractive	Attractive	Attractive
	PBT ³		Somewhat unattractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive
	Polyamide		Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Somewhat unattractive	Attractive	Attractive
	TDI ⁴		Not attractive	Somewhat attractive	Somewhat attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive
	MDI ⁵		Attractive	Somewhat unattractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive
	Epoxy		Somewhat unattractive	Somewhat unattractive	Somewhat attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive
	Polycarbonate		Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive
	s-SBR ⁶		Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive
Other	Chlor-alkali		Not attractive	Somewhat unattractive	Somewhat attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive
	Fluoropolymers		Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive
	Polysilicon		Not attractive	Somewhat unattractive	Somewhat attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive
	Silicones		Somewhat unattractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive	Attractive

¹Polyvinyl chloride.

²Polyethylene terephthalate.

³Polybutylene terephthalate.

⁴Toluene diisocyanate.

⁵Methylene diphenyl diisocyanate.

⁶Solution polymerized styrene butadiene rubber.

Source: Expert interviews; McKinsey analysis

Despite the buildup of the past decade, imports are likely to remain a major part of China's supply-demand balance through the coming decade, notably for products where China lacks feedstock or for those that have high technology barriers. China has so far preferred to import petrochemicals from an array of international suppliers as a less risky option than increasing

its dependency on crude-oil or naphtha imports to the level that would be needed to reach petrochemicals self-sufficiency. At the same time, China's refinery capacity is now balanced (with a small surplus in gasoline capacity), and future refining capacity expansions are expected to match fuels demand. As a result, substantial volumes of petrochemical imports

are expected to be required through 2020. With petrochemicals demand forecast to grow at 6 to 7 percent per year through 2020, international suppliers with cheap feedstock are well positioned. While China has significant shale-gas deposits, current indications are that these are unlikely to be tapped on a large scale until after 2020. Gas extracted so far has been fairly dry, and any new gas supply will encounter strong demand that makes advantaged pricing for chemicals production less likely.

International companies are also strongly placed to meet China's growing appetite for specialty chemicals, forecast to grow at 8 to 9 percent per year through 2020. This appetite is being driven by rising standards of living and increasing demand for consumer products from household goods to cars, all of which require specialty chemicals in their production. At the same time, the upward trend in the sophistication of manufacturing in China—for example, from textiles to electronics—should increase demand for more advanced chemicals. This represents a good base upon which international companies can expand, especially since in many such segments, international companies occupy the “high ground” with respect to product quality, performance, and customer service; their Chinese competitors are still working to move up the ladder.

Meanwhile, the local manufacturing base that many international companies have established via joint ventures (the main focus in petrochemicals due to access restrictions) or wholly owned subsidiaries should position them to continue to expand in the growing China market and to do so profitably. BASF, for example, the leading international chemical player in China in investments and sales, has seen its China sales climb at a compound annual growth rate of 20 percent since 2000, and the \$1.4 billion

expansion of its Nanjing joint venture with Sinopec completed last year should help drive further growth. BASF's total China sales reached €6.5 billion (\$8.7 billion) in 2011. Multinationals that have established manufacturing in China have typically built state-of-the-art plants that combine world scale with China's lower labor and capital-expenditure costs to be competitive globally, and they have a cost advantage over aging small-scale local plants. The new plants benefit from domestic pricing levels set by these disadvantaged local plants or at parity to imports (in some cases bolstered by tariffs), and they provide home-player access to the Chinese market.

Entering a more competitive world

All of these factors give international companies a strong hand to play, but changes under way in China are creating new challenges.

First, China's chemical industry is moving to a new chapter of development. From the headlong expansion of the early 2000s, the chemical industry is now entering a period of consolidation and more selective growth, and the bar on foreign investment has been raised. As already noted, overcapacity is now a challenge in a number of product segments. Any international company wanting to make an investment now faces a more selective appraisal by the Chinese authorities. International companies that cannot bring access to feedstocks or to technology that China lacks may not find much of a welcome mat.

Second, as growth in the commodities market slows, more Chinese companies are expected to shift their activities to the specialties side of the market. There are already a significant number of successful Chinese players in specialties, and this group is growing fast. Examples include Bairun, the leader in the Chinese flavors-and-fragrances market; Yantai Wanhua, an isocyanates

maker; and Zhejiang NHU, a vitamin maker. Chinese companies have developed competitive processes in a range of products, including xanthan gum and glyphosate, and low-cost technology has helped them become uncontested market leaders in vitamin C; at the same time, many Chinese companies are adept at reverse-engineering products made by international companies. Chinese players will be making a concerted push to move upmarket and combining it with their local-player advantages, most importantly, their lower production costs compared with imports and their greater ease in establishing relationships with key customers—both trump cards in a slower and more competitive environment.

Third, China is becoming more environmentally conscious, and new investments in chemical facilities are likely to become increasingly contested by the local population. A growing number of planned chemical projects have been withdrawn or modified following protests (their number doubled in the second half of 2012), and a “not in my backyard” mentality is becoming common. Compounding this challenge is China’s rapid urbanization, which might force the relocation of many chemical plants to make way for expanding residential settlements. Intensifying pressures in this area represent a further challenge to international players, which often do not have local networks in place to help them navigate these types of issues.

Taking steps to assure profitable growth

As the Chinese market becomes more complex and competitive, international companies are seeing the edge they have enjoyed to date erode somewhat—but the importance of China’s market to most companies’ growth strategies

remains. Here are five key areas on which they should focus to succeed.

1. Aligning with the country’s needs

While there is a consensus on continued demand growth in chemicals, it is clear that the areas of opportunity are becoming more nuanced, and international companies will need to adapt accordingly. One approach to explore is prioritizing products in the company’s offering that match up with what China needs—and that the Chinese state is promoting.

China’s latest five-year plan offers some indications to chemical makers of such areas. The core chemical industry is viewed as a mature manufacturing industry where there could be room, albeit limited, for international players bringing technology that China still needs. However, chemicals are important enablers for a wide range of strategic industries in which the Chinese government wants to nurture global champions, particularly in those industries for which China will be a major market.

Such industries include electric vehicles, new energy technologies, and transportation-related industries, for example, high-speed rail and civil aviation. Here, international chemical companies have the opportunity to become trusted partners for China’s indigenous innovation in sectors that have backing from government ministries. Similarly, in agriculture, international chemical companies that can help China close the agricultural-productivity gap and help the country maintain its food self-sufficiency are likely to garner interest.

An important and related area is the evolution of industry standards. Here, international

companies have the opportunity to work closely with government bodies to help shape product specifications and environmental standards. New product and environmental standards are likely to be a key growth driver for some chemicals, and international chemical companies can contribute their valuable expertise from standard-setting work in developed markets.

2. Proactively managing stakeholders

As international chemical companies seek to advance their businesses in China, they need to work with many stakeholders across the regulatory and business landscape. Building a new plant requires approval from many different levels of central and local government agencies, while new-product introductions in regulated product areas such as agricultural chemicals also require extensive rounds of approvals involving central and local government, as well as state research institutions.

Nowhere is stakeholder management more important than in new-plant projects. In the absence of a formal process in China at present for legitimizing proposed investments in a community, international companies will need to work hard on proactive stakeholder management to address the concerns of environmentalists and local communities. Companies should recognize that local governments may put health and environmental concerns higher than economic growth.

Successful international companies are putting in place government-affairs teams dedicated to identifying key stakeholders in all areas affected by their businesses. The teams work on understanding stakeholders' concerns and addressing these concerns ahead of time

so that the company is able to advance its projects. Where they can, international companies should make the case that they have earned the license to operate at home based on their strong health, safety, and environment performance and that they will bring the same excellence to their Chinese projects.

3. Rethinking channel and go-to-market strategies

The profile of China's market is evolving as second- and third-tier cities are set to make the largest contribution to the country's growth over the next decade and the development wave is moving inland and westward from the coastal regions. The urban clusters emerging across China will represent 90 percent of GDP by 2025, but different cities have their own particular characteristics (for example, with regard to industry profile and density). Meeting the needs of these markets will require a tailored distribution approach that expands international companies' focus beyond the largest tier-one cities and coastal provinces.

Since China's market is heavily relationship driven, having a local presence is essential in the new areas that are opening up; going it alone is virtually impossible. To acquire footholds across this vast territory, companies must develop an appropriate distribution-partner network that will enable them to get closer to customers and differentiate them in the increasingly competitive environment. It is critical to select the right distributor partners, since capabilities, relationships, dependability and ethics, and influence vary sharply among players (Exhibit 3).

In many cases, international companies must build up their distributors' capabilities while

also delivering a message to end customers that emphasizes their products' value in use rather than its selling price—where international players are usually at a disadvantage to locals.

Given that China's distributor landscape is fragmented and that the use of distributors is critical to penetrate the market and keep costs to serve competitive with local players, maintaining "last-mile control" of the channel is often a challenge for international companies. Some companies are applying a range of techniques to install and maintain last-mile control. These include strengthening key-account management when selling higher-value chemicals to large and sophisticated customers, setting up a shadow management system to oversee distributors and supplement their capabilities, and working with distributors

to expand their presence at retail outlets (for instance, for agrochemicals).

4. Using M&A and partnerships to build their base

International companies should use M&A and joint ventures to grow more quickly and take bigger steps than they can through organic growth. This approach will enable them to increase market access and fill product or technology gaps. Multinationals have been active in around 200 deals over the past ten years, but these have been small deals, for the most part; the largest foreign acquisition of a Chinese chemical company to date is Rhodia's \$428 million purchase of 87.5 percent of surfactants maker Feixiang Chemicals in 2010.

With the growth of the past decade, a group of dynamic midsize Chinese specialty-chemical

Exhibit 3

We observe five distributor models in China.

Business model	Description	Market share, ¹ %
A Relationship-focused distributor	<ul style="list-style-type: none"> Handles sales via access to local customers Provides ancillary services for transactions such as extended payment terms, logistics 	50–60
B Trader	<ul style="list-style-type: none"> Affiliates of state-owned enterprises with import/export licenses, or medium-size traders, sourcing for smaller downstream players 	10–20
C Market developer	<ul style="list-style-type: none"> Helps suppliers to develop new customers and to promote and launch new products Supports existing customers (eg, technical support) on behalf of suppliers 	5–10
D Asset-heavy box mover	<ul style="list-style-type: none"> Provides logistics services (eg, warehousing) for end users Typically not involved in customer development or maintenance 	5–10
E Distributor with manufacturing/tolling capability	<ul style="list-style-type: none"> Plays a role similar to that of a market developer Markets products it manufactures 	<5

¹Based on volume.

Source: Expert interviews; McKinsey analysis

players has emerged; this could present attractive acquisition opportunities. Now may be an opportune moment for international companies to move, since traditionally high market valuations have moderated.

First, international companies should set up a dedicated business-development team in China, which ideally would also bring experience in deal sourcing. Such teams should have the resources needed to undertake the target screening required to identify which of the many small and midsize companies are attractive targets.

Second, these teams should negotiate deal structures that retain key personnel, and they should develop creative partnership structures such as alliances that could open the path to future acquisitions. In this way, international companies could overcome the key issue that most small Chinese companies lack established systems and processes that would ensure core know-how—typically represented by a few key employees like the head of sales or head of technology—would be retained after an acquisition.

5. Leveraging China for a global business

China can bolster a company's global position in two important ways. First, establishing manufacturing in China enables a producer to take full advantage of China's lower capital-investment costs and lower operating costs. Doing so can not only improve the position of an international company to meet local demand and avoid import tariffs on its products, but it can also strengthen its global supply base: by building a larger-scale plant to serve both the domestic and international markets, it can achieve additional economies of scale. In products such as fine chemicals, where labor costs outweigh raw-material costs because there are multiple manufacturing steps, China has a

global cost lead that it will maintain in the medium term despite rising wage rates. A number of international companies are already using China as their regional production base for specialty products. In addition, local manufacturing enables international players to tap into China's advantaged position on certain raw materials, including phosphate rock, fluorspar, and rare earths.

The second opportunity is China's innovation potential. A number of chemical companies have already established substantial R&D centers in China, gaining access to the country's large pool of engineers and scientists. While such centers have tended to use their Chinese R&D staff for basic technical and applications support, some companies are now involving them in more sophisticated work on product development and adaptations of existing products.

International companies should look at leveraging this potential as a long-term investment. Businesses that want to innovate successfully in China might begin by building up innovation capabilities locally or leveraging global innovation resources while drawing on a deep understanding of local Chinese markets. They should take advantage of government policies that support innovation. Chemical companies should also seek to establish contact with China's many research institutes; by collaborating with these institutes, companies could play a role in the definition of standards for chemicals usage across products and industries. And as discussed in "A CEO's guide to innovation in China,"¹ companies should instill a culture of risk taking and promote cross-team collaboration in their China-based innovation activities.

¹ Gordon Orr and Erik Roth, "A CEO's guide to innovation in China," *McKinsey Quarterly*, 2012 Number 1, mckinsey.com.



China, already the world's biggest chemical market, is on a trajectory over the next decade to become an even larger but much more competitive one. International companies that want a share in this must review how to align their offerings with China's evolving needs, how to access shifting demand, and how to expand and strengthen their base. There is another issue that international companies must address that in a sense underlies all of the above—talent shortages and talent management. Just as

business competition in sectors such as specialty chemicals is likely to heat up, the competition for talent is likely to intensify as Chinese players seek to improve their capabilities. International companies must continue to invest in their corporate brand; they also need to create value propositions for university graduates and industry experts that go beyond compensation and are tailored to meet the demands of an ambitious Chinese workforce. [○](#)