China’s Chemical Industry: Flying Blind?

For multinational chemical companies working in China, the rules of the game are shifting. Success requires dramatic change in past practices and new strategies to ensure immediate and long-term success.
Rosy expectations from headquarters about growth, profitability, and competition in China clash with the more realistic picture from the ground: New forces are reshaping the chemical industry for multinational companies working there.

China’s 12th Five-Year Plan (approved on March 14, 2011, and effective through 2015) will further challenge multinationals’ once-certain growth and profitability, as policy makers put their stamp on the industry and create an uneven playing field that favors state-owned enterprises (SOEs). The newest plan seeks to increase China’s self-sufficiency in chemicals, create national champions with more access to Western technology and processes, secure international access to raw materials, and provide SOEs with privileged access to key raw materials and energy (see sidebar: China’s Deteriorating Access to Labor and Raw Materials). At the same time, labor cost increases are consistent with productivity growth. However, the real insight is in the details. For example, multinationals seeking highly qualified, university-educated staff in tier 1 cities face significant wage increases. Improving the value added of Chinese workers is clearly a component of the latest Five-Year Plan.

As in any import-dependent country, policy decisions in China are designed to reduce risk and gain access to resources. China has a strategic oil and coal reserve and plans to spend $100 billion by 2020 to build a 90-day reserve that parallels the U.S. reserve. China will also expand its capabilities in coal bed methane (CBM) and shale gas. It has also restricted raw materials exports, including rare earth, antimony, and bauxite, to encourage multinationals to produce in China and, more generally, to increase the value added of manufacturing in China above and beyond raw material extraction. Restrictions on foreign investment in mining and exploration are designed to reduce foreign investment and operations.

International policies have resulted in significant international investment by Chinese companies—$100 billion in Africa, for example. Of the total $168.4 billion invested by China between 2005 and 2010, 33 percent was in oil and gas, 20.4 percent in finance, and 19.5 percent in mining assets. Chemicals have constituted only 1.1 percent of foreign investment by China.

These international policies include the following elements:

- **Harnessing SOEs’ buying and inventory capabilities.** The government is using SOEs to invest in storing raw materials, offering easy financing from state-owned banks.

- **Encouraging private acquisition of foreign assets.** Private companies are being encouraged to acquire mineral fields and other assets abroad.

- **Using China’s reserves.** China’s reserves are being used to collaborate with and influence commodity-rich countries.

- **Taking an active role in supply-contract negotiations.** This recently occurred with BHP and Rio Tinto, two major western suppliers.

As SOEs invest abroad, a new opportunity may open up for multinationals in China that seek to export from China. By increasing regional employment, they may find support from regional administrations and increase the perception that they are good corporate citizens. However, this strategy increases multinationals’ exposure to Chinese currency appreciation.

Economists continue to debate the impact of China’s growth on labor productivity. Most believe that labor cost increases are consistent with productivity growth. However, the real insight is in the details. For example, multinationals seeking highly qualified, university-educated staff in tier 1 cities face significant wage increases. Improving the value added of Chinese workers is clearly a component of the latest Five-Year Plan.

More generally, China’s population is shifting dramatically because of the One Child policy. While it has helped China control its population, the longer-term effects are an aging population with a gender disparity because of a bias for male offspring.

The net result of these trends is increased labor costs. China’s costs are heading for parity with Mexico, creating opportunities for less developed countries such as India, Indonesia, Thailand, and Vietnam, where costs are lower and there has been less industrial development.

Rising labor costs are only part of the picture. Education standards also pose a problem. China is investing heavily in creating world-class universities with a strong research orientation, but many other colleges in China have widely varying quality.
time, the plan is aiming to boost domestic consumption by expanding infrastructure and creating housing for about 300 million migrants moving to cities, while dealing with severe environmental degradation and avoiding social unrest.

This report, based on our research, our experience in China, and more than 25 interviews with presidents, vice presidents, managing directors, and directors working for chemical multinationals operating in China, offers a window into one of the most important industries in China.

The Industry’s Growth

Chemicals are fundamental to almost any economy. In the late 19th and early 20th century, for example, formerly agrarian and newly consolidated Germany developed its chemical industry to move past the economy of the United Kingdom, where the Industrial Revolution first took hold. Today in China, the chemical and petrochemical industries are critical to many rapidly growing industrial sectors, including consumer goods, automotive, and construction. As a result, the chemical industry has high priority within the Chinese government.

China’s chemical industry has grown dramatically in the past 30 years, in line with the country’s overall growth and the fundamentals of key customer industries. China will soon represent one-third of the global chemicals demand (see figure 1). The picture remains optimistic for foreign chemical companies in China, as the country continues to depend on foreign producers for many chemicals, particularly advanced specialty chemicals, despite the government’s self-sufficiency goals.

Figure 1

China’s chemical market will soon represent one-third of global demand

China’s chemical market value by region and GDP ($ billion)

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP China</th>
<th>China</th>
<th>Asia Pacific excluding China</th>
<th>Europe</th>
<th>United States</th>
<th>ROW</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>2.759</td>
<td>425</td>
<td>644</td>
<td>233</td>
<td>791</td>
<td>666</td>
</tr>
<tr>
<td>2007</td>
<td>3.030</td>
<td>517</td>
<td>687</td>
<td>249</td>
<td>850</td>
<td>719</td>
</tr>
<tr>
<td>2008</td>
<td>3.253</td>
<td>594</td>
<td>766</td>
<td>287</td>
<td>851</td>
<td>791</td>
</tr>
<tr>
<td>2009</td>
<td>3.018</td>
<td>654</td>
<td>725</td>
<td>301</td>
<td>743</td>
<td>666</td>
</tr>
<tr>
<td>2010</td>
<td>3.351</td>
<td>761</td>
<td>821</td>
<td>329</td>
<td>701</td>
<td>633</td>
</tr>
<tr>
<td>2011</td>
<td>3.603</td>
<td>855</td>
<td>856</td>
<td>351</td>
<td>756</td>
<td>633</td>
</tr>
<tr>
<td>2012</td>
<td>3.986</td>
<td>966</td>
<td>885</td>
<td>375</td>
<td>812</td>
<td>670</td>
</tr>
<tr>
<td>2013</td>
<td>4.207</td>
<td>1,086</td>
<td>918</td>
<td>401</td>
<td>870</td>
<td>701</td>
</tr>
<tr>
<td>2014</td>
<td>4.547</td>
<td>1,222</td>
<td>952</td>
<td>1,197</td>
<td>988</td>
<td>851</td>
</tr>
<tr>
<td>2015</td>
<td>4.917</td>
<td>1,369</td>
<td>1,103</td>
<td>1,179</td>
<td>988</td>
<td>856</td>
</tr>
</tbody>
</table>

Notes: ROW is rest of the world. Figures may not resolve due to rounding.
Sources: Datamonitor; A.T. Kearney analysis
As China’s market grows, more top multinationals are increasing their exposure to the market as they invest in local Chinese production facilities. Some smaller players have invested so much in China that the market is now one of their core businesses—if not their core business. In tandem with foreign multinationals’ increasing investment has been the rise of chemical SOEs—the leading SOEs have increased their investment budgets and have grown impressively since 2008. Overall, chemical revenues in China grew 24 percent year over year between 2005 and 2010.

By 2014, China’s share of the global chemicals market is projected to rise to 29 percent. Strong growth in chemicals comes in large part from growth in customer industries. China’s automobile industry growth will average 24 percent per year between 2008 and 2012, even though 2011 growth was almost flat. Consumer electronics will grow 23 percent a year between 2008 and 2015, and construction will see 24 percent yearly growth over the same period. Chinese consumers are driving the demand in the automotive and construction sectors. Despite a recent economic slowdown, medium- and long-term growth projections are sound.

**Chinese consumers are driving the demand in the automotive and construction sectors, and despite a recent economic slowdown, medium- and long-term growth projections are sound.**

The key issue for chemical multinationals is that their fate depends on Chinese government policy at the national, provincial, and local levels. Government influence in China is complex and often opaque. It starts with the Five-Year Plan, which includes industrial policy goals, safety and environment regulation, access to feedstock, pricing, licensing, and permissions. The attitudes, beliefs, and pressures of the extra levels of government can also be difficult to assess. Chemical multinationals will benefit by putting more effort into understanding and communicating with all stakeholders and considering how government actions may evolve, with corresponding scenario plans at the ready.

**The Capital Investment Picture**

The chemical industry in China reached a turning point in 2008 when outbound investment from China, equaling 36 percent of the global industry’s total foreign direct investment (FDI), became significant for the first time. In 2009, when Western economies were reeling, China’s outbound investment dropped somewhat in absolute terms from $53 billion to $44 billion, but grew relatively to 56 percent. The increase will continue, reaching $137 billion in 2015. Inbound FDI in chemicals will plateau in the $160 billion to $200 billion range through 2015, as China’s gross domestic product slows.

Most executives we spoke with are confident about future demand. Nearly all surveyed say their return on capital expenditures improved in 2010 and they expect further improvement.
in 2011. They believe that doing business in China will become easier as intellectual property (IP) protection improves and, importantly, as their understanding of local government develops in parallel.

Government Policy Goals Have Changed

Given the enormity of China’s population, the government sets goals around both economic growth objectives, including employment, and constraints such as food supply, water, energy, and oil. The chemical industry is no different. However, government policies and goals have shifted since the economy was opened up in 1978. We see three phases:

1978-1990: Reform and opening up. The economy was opened to the world in 1978, and the government, understanding the importance of the chemical industry, permitted but heavily controlled FDI. More important than FDI is the fact that China’s domestic consumption boomed. Most companies invested in China to produce for Chinese demand.

1990-2000: Foundation building. Multinationals were permitted to enter China to generate export sales, and joint ventures between chemical multinationals and Chinese firms were allowed. Incentives encouraged multinational investment in China, and chemical industrial parks were developed to manage and facilitate land use.

2000-2011: A land of opportunities. Growth projections during this phase were limitless. FDI by chemical multinationals boomed as China became more integrated into the world economy and chemicals became a major Chinese export.

Opportunities in China remain impressive, but this new era for the chemical industry is far more complicated than in the past.

A new phase, starting in 2012, is likely to be more challenging for multinationals, with capital investment potentially much riskier. While growth projections remain high, we expect the government to intervene more actively to upgrade and reconfigure the structure of competition. The government is seeking to increase the local value added in the chemical industry by gaining more access to specialty and fine chemicals and improved chemical production processes. In many segments, this has increased competition.

Opportunities in China remain impressive, but this new era for the chemical industry is far more complicated than in the past. Multinationals that are better informed and better connected with government agencies and build more support for their presence in China will have a greater chance of counterweighing SOEs’ political advantages. Assimilating into the Chinese economy—and being perceived as doing so by measuring and communicating the benefits they offer—is a strategic imperative.
Self-Sufficiency

Unlike consumer products and other areas of less strategic importance, a large trade deficit in chemicals—$54.5 billion in 2009—is a major concern for a government that wants self-sufficiency in strategically critical industries.

Despite the government’s push, the trade deficit offers an opportunity for multinationals. For example, domestic demand for many chemicals used in plastics outpaces capacity and will continue to do so through 2020—representing a potential investment opportunity for multinationals (see figure 2). The trade imbalance is more dramatic in oil and gas, as China has almost no oil reserves and few anticipated discoveries.

Figure 2

**China’s domestic demand for many chemicals outpaces domestic capacity**

<table>
<thead>
<tr>
<th>PE, PP, PVC, PS</th>
<th>Domestic capacity</th>
<th>Domestic demand</th>
<th>Capacity deficit as % of demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>(million tons)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>19.0</td>
<td>19.0</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>27.9</td>
<td>20.1</td>
<td>+37%</td>
</tr>
<tr>
<td>2009</td>
<td>27.5</td>
<td>22.2</td>
<td>+50%</td>
</tr>
<tr>
<td>2010</td>
<td>29.3</td>
<td>29.3</td>
<td>+23%</td>
</tr>
<tr>
<td>2015e</td>
<td>35.9</td>
<td>41.3</td>
<td>+30%</td>
</tr>
<tr>
<td>2020e</td>
<td>74.8</td>
<td>59.6</td>
<td>+25%</td>
</tr>
</tbody>
</table>

Example: Plastics

Note: PE is polyethylene, PP is polypropylene, PVC is polyvinyl chloride, PS is polystyrene.

Sources: Chemical Market Associates, Inc.; Shell, Chemical Week; A.T. Kearney analysis

Multinationals’ Increasing Exposure to China’s Market

China’s growth and past capital investment mean that China represents a greater percentage of total revenues for chemical multinationals. Between 7.5 and 50 percent of the total sales for the top 15 multinationals in China come from China, and smaller firms have often invested even more aggressively.

The larger international chemical multinationals are not sitting still. China’s growth is leading to additional investment in petrochemicals, basic chemicals, polymers, and specialty chemicals—including Dow’s $8 billion to $10 billion coal-to-chemicals project with partner Shenhua Group and DuPont’s joint venture with Chenguang Chemical Research Institute to produce fluoroelastomers.

Chinese companies are also growing stronger and making significant capital investments domestically and internationally. SOEs Sinopec, PetroChina, CNOOC, ChemChina, and
Sinochem all saw year-over-year revenue increases of more than 30 percent in 2010. Because of government support, these SOEs have almost unlimited budgets to pursue their strategies and international expansion and to increase their competencies. Multinationals’ competitive position is growing more difficult, not just in China, but potentially globally.

The Rules Have Changed

With the chemical industry’s increased prominence in China, the rules of the game have changed—more suddenly than many in global headquarters understand. Multinationals with significant presence are now competing to a much greater degree on a non-level playing field. Their SOE competitors (along with well-connected private Chinese businesses) receive support from multiple levels of government both directly and indirectly.

The support includes direct subsidies and access to low-cost capital with favorable terms and conditions. Chinese companies may also benefit from less stringent enforcement of regulations, faster approval cycles, and privileged access to land, water, waste treatment, energy, and raw materials. SOEs’ competitive position can also change suddenly as they are encouraged by government policy makers to make major capital investments abroad, merge with competitors, or set up new facilities that may aim to replace multinationals’ capacity or exports.

Raw Materials and Energy

Raw materials and energy costs clearly play a significant role in the chemical industry. Prices are rising and highly volatile. With China’s already increased need for oil imports becoming greater, supply problems are a significant risk for multinationals. SOEs often have preferential access and can deal with supply shortages, price increases, and volatility more easily because of their access to capital. And there is less pressure to pass on raw material price increases to end customers within a short period of time. Multinationals, driven by profit, need to pass on price increases much faster.

Access to oil is—and will likely remain—tightly controlled by the government, which is also attempting to secure stable supplies from international markets via contracts, investments, and acquisitions.

Over the medium and long term, multinationals may be able to differentiate by serving as an alternative path for SOEs to gain reliable access to oil by virtue of their international contracts, ownerships, and relationships.

Government Policy

Government policy is complicated for companies working in China, even in the best of times. Government agencies have a strong influence on the economic system, and the country’s size leads to additional input from national, provincial, and local government.

China’s government plays many roles, many of which are handled by the private sector in other countries. In China, government is regulator, lender, investor, land-use planner, municipal services provider, industrial policy shaper, investment bank, political organization responding to employment and health concerns, and standard setter.
Multinationals cannot afford to wait and see as policy makers more assertively reshape industries, as water resources and land constraints grow, and as central and provincial governments argue about environmental standards and local requirements for addressing the movement of migrant workers.

The investment decisions the government encourages or demands are often strategic. For example, the government has added capacity in the shipbuilding industry in excess of projected demand. Whether this is a preemptive strategy to counter competition or an aggressive move based on long-term industry development, there will be an impact on multinational competitors.

This has already happened in several industries. In coal, cement, and steel, the government’s control of all the levers of power through banking, capital investment, permits and licensing, and infrastructure planning is changing value chains and customer structures. In these three industries, consolidation will increase the negotiating power of the suddenly larger national champions. By 2015, the top 10 steel producers will own 60 percent of market revenues, up from 43 percent in 2009; in cement, the top 10 will own 35 percent, up from 23 percent. The number of small producers of coal will drop from 10,990 entities to 2,980 from 2009 to 2015, and their market share will drop from 68 percent to 35 percent.

There are roughly 35,000 chemical companies in China; history and experience suggest that consolidation will occur eventually. But the hand of government will likely push the industry more quickly than normal toward consolidation.

Rising Risk

Although we expect solid medium-term growth, the environment remains unpredictable. The risks fall into three categories (see figure 3):

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**Figure 3**

**Multinational chemical companies face a number of hurdles in China**

<table>
<thead>
<tr>
<th>Costs, volatility, and raw material access</th>
<th>Economic system</th>
<th>Political system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw material prices and volatility</td>
<td>12th Five-Year Plan</td>
<td>Intellectual property rights infringement</td>
</tr>
<tr>
<td>Feedstock and energy prices</td>
<td>Industry consolidation and restructuring</td>
<td>Social unrest</td>
</tr>
<tr>
<td>China’s dependence on raw material imports</td>
<td>Provincial debt, property, and food-price inflation</td>
<td>Corruption</td>
</tr>
<tr>
<td>Labor productivity and competition for talent</td>
<td>Environmental degradation</td>
<td>Demographics</td>
</tr>
<tr>
<td></td>
<td>Unsound economic decisions</td>
<td></td>
</tr>
</tbody>
</table>

Source: A.T. Kearney analysis
Costs, volatility, and raw material access. Practically every input used by chemical companies is at risk. Access to land, water, waste disposal, and skilled labor cannot be taken for granted for new projects. Existing investments have some advantage in having already obtained approvals, but those and supply are often not assured; even when reasonably assured, volatility remains a major risk.

Economic system. The economic system is in flux. The Five-Year Plan seeks to reframe the industry, leading to new, stronger competitors. The financial consequences of provincial and speculative borrowing interrupt infrastructure investment needed for business activities. Environmental degradation can trigger sudden regulatory changes, as shown when Beijing industries were closed to improve air quality for the 2008 Olympics. Policy decisions to maintain social stability can occur unpredictably, even if they are economically irrational.

The high debt levels of central and provincial government have also increased the risk of sudden changes in credit availability and cost. Inflation is high, which means that those with access to inexpensive capital may choose inflation-hedging investments in fixed assets, further distorting the economic environment.

Multinationals need to be better informed and better connected with government agencies.

Political system. One often-overlooked factor is that the central government’s difficulty in reining in inflation is a new phenomenon, reflecting the economy’s growth and, perhaps more importantly, the emerging polycentrism of economic and political power. While the central government maintains a firm hand on SOEs, China’s economic and sociopolitical evolution is creating a less centralized society featuring bigger, and thus more influential, commercial and regional institutions. Today, this conflict is reflected in the differences in how regional and central governments balance job growth and pollution.

Despite environmental concerns, the central government remains focused on maintaining political and economic stability, spurred by continued economic and job growth. However, this is challenged by regional and ethnic social unrest, resource constraints, an aging population and its impact on government spending, and an economic and legal environment in transition, resulting in high levels of corruption and misallocated resources. For most multinationals, IP protection is another concern. While the situation has improved somewhat with Chinese enterprises now owning IP and lobbying for improved protection, IP infringement remains a significant problem.

Multinationals’ planning needs to include scenario analysis, paying more attention to regional differences, and increasing risk analysis and mitigation. China is largely a safe, orderly society. In all likelihood, the problems will not be riots, but rather resource and environmental disputes. The experience of Foxconn, a major consumer electronics supplier for iconic Western brands that was forced to double its wages and improve working conditions, may become more typical, especially as the government encourages consumption through increased wages, as labor becomes scarcer because of economic growth, and as Western customers press for higher working standards.
Many chemical multinationals in China will need to widen their functional expertise as risks and complexity increase, especially in the area of operational risk management (see sidebar: Tackling Risk Management: Five Key Strategies).

**Tackling Risk Management: Five Key Strategies**

All firms have accounting capabilities to measure revenues and expenses, yet few can manage changing levels of risk, assess the availability, costs, and timeliness of contingency plans or quantify in detail or manage their risk.

We suggest tackling risk management at five levels of increasing sophistication:

- **Efficient firefighting.** Put in place contingency plans to handle a problem when it occurs. Validate these plans to ensure that assumptions come true after supply interruptions.
- **Insurance.** Reduce risk by transferring or sharing risk with a third party, such as a private or state-owned company.
- **Core risk management.** Make strategic decisions about production process architecture to determine how much exposure you face. As a general rule, achieving production scale in a single location is riskier than maintaining multiple locations and a broad product line. A typical solution is a centralized system that assesses, prioritizes, and manages risk.
- **Return-risk optimization.** Use risk management information to shape investment strategies. At this level, integrated risk simulations are also used for suppliers, competitors, and customers. Anticipating the effect of supply chain interruptions can identify opportunities for competitive advantage. For many companies, this step means moving from the deterministic world of spreadsheets to more probabilistic Monte Carlo or stochastic simulations.

Architectures for uncertainty and complexity. Yale professor Charles Perrow, a specialist in complexity-driven disasters, points out that, as systems become more complicated, failure from "interactive complexity" is both inevitable and normal. Even with the best return-risk optimization strategies, there remains residual uncertainty that cannot be remediated. The more complicated supply chains become, the greater the likelihood of unpredictable—or even unthinkable—failures. (Few risk managers would have thought to perform risk analyses on Japan's electricity supply before the 2011 earthquake and tsunami.) The prudent response may be to make architectural decisions about distributing operations and finances, including dividend policy, cash retained, debt lines available, leverage, assets, and revenues.

At this level, the architectural goal is to modularize or diversify activities and design a business and financial architecture that, in the event of disaster, permits a gradual degradation of revenues as opposed to complete failure.

For identifiable and "thinkable" specific risks, a company can choose from a variety of mitigation approaches:

- **Avoid.** Eliminate the possibility of risk.
- **Transfer.** Shift the risk or outcome to a third party.
- **Mitigate.** Reduce the impact of a risk.
- **Minimize.** Reduce the probability of an event occurring.
- **Respond.** Reduce the impact after an event occurs.
- **Monitor.** Define the trigger point for initiating contingency plans.
- **Accept.** Bear the full risk of exposure.

Although risk management processes are obviously vital and necessarily incomplete, an integrated software model is a new and important capability for simulating and testing interruptions' impact on lines of business, enterprises, customers, competitors, or markets. Caution is needed, however, as the software may provide a false sense of security unless a companion business architecture review is performed.
An Uneven Playing Field

China’s goals for self-sufficiency have led to an opaque set of policies that give multinationals a disadvantage (see figure 4). SOEs’ networks with local customers, partners, and government help them receive preferential treatment in both regulations and enforcement. Even where there appears to be no enforcement bias, SOEs may often be less diligent with compliance and, in a sense, more reactive. Multinationals accustomed to compliance, in contrast, will be more likely to comply, independent of the level of inspection or interaction with the government.

Figure 4

Growth fundamentals are mostly positive, but the chemical playing field is not level

### Financial support
- **Direct subsidies** to state-owned enterprises (SOEs) to offset refining losses, for example
- **Financing** to SOEs, but not to privately owned organizations or multinationals
- **R&D funding** to domestic chemical companies
- **Preferential loans** to SOEs from state-owned banks

### Commodity pricing
- **Oil import and wholesale market**
  - Nontransparent award of import licenses and restrictions on oil product depot ownership affect multinationals
- **Price of oil products**
  - Adjusted crude oil price variation is 4 percent during a continuous period of 22 days.
  - No resemblance to open market; may disadvantage multinationals exposed to global oil price fluctuations

### Regulations
- **Environmental and safety laws**
  - Existing laws applied inconsistently and often to multinationals’ disadvantage
- **Toxic chemicals**
  - Multinationals must register toxic chemicals at $10,000 per certificate; does not apply to domestic producers
- **Local content**
  - Indigenous innovation regulations require government procurement to favor Chinese intellectual property products

Note: SOE is state-owned enterprise, POE is privately owned enterprise.

Sources: European Chamber of Commerce China; A.T. Kearney analysis

One large, poorly understood barrier to entry for multinationals is SOEs’ tremendous success reaching hard-to-service rural areas, which is difficult and expensive for multinationals. On top of that, past estimates for distribution costs will likely be obsolete.

SOEs’ preferential treatment and privileges cover three major areas:

**Financial support.** SOEs receive direct subsidies from provincial and local governments seeking political cover with consumers and local business. In the short and medium term, SOEs will have lower hurdles to profitability, but their lack of financial discipline could become a long-term strategic disadvantage.

Support comes in the form of preferential financing from state-owned banks. The state may also provide research and development (R&D) support only for domestic chemical companies.

**Commodity pricing.** Oil is not a truly open market in China. Crude oil price volatility is restricted to 4 percent every 22 days for SOEs, but multinationals may be fully exposed to fluctuating global oil prices (in addition to future upward revaluation of the currency). Dampened prices sometimes give SOEs access to lower prices. In other times, they may help multinationals that have made better contracting or hedging decisions. However, because SOEs can typically borrow at lower rates and obtain financing on non-economic terms, most multinationals find that maintaining a regular supply of inputs places them at a cost disadvantage.
Oil prices in China rose at an annual rate of 67 percent between January 2009 and July 2011, compared to a global rate of 54 percent. Selecting business strategies and partners that allow raw material price increases to be passed on is critical for multinationals.

Without a dramatic advantage in process technology, multinationals will also find it difficult to compete in commodity markets where the central government has designated SOEs to expand their operations.

Government concerns about energy supply will grow. Dependence on oil imports rose from 27 percent in 2000 to 50 percent in 2009 (see figure 5). It may reach 69 percent by 2015. Many observers in recent years have seen China as non-expansionary, but resource needs could change that. Recent conflicts with Japan, Vietnam, and the Philippines over ownership of and access to offshore oil in the South China Sea reflect the government’s sensitivity to this issue.

**Figure 5**  
*China’s dependency on crude oil imports is rising*

<table>
<thead>
<tr>
<th>Crude oil production and net imports (thousand barrels per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>2000</td>
</tr>
<tr>
<td>2001</td>
</tr>
<tr>
<td>2002</td>
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<tr>
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<td>2007</td>
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<tr>
<td>2008</td>
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<tr>
<td>2009</td>
</tr>
</tbody>
</table>

Sources: National Development and Reform Commission (China), International Monetary Fund, U.S. Energy Information Administration, Deutsche Bank, A.T. Kearney analysis

**Regulations.** Environmental protection and transportation safety laws increase costs for multinationals. For example, multinationals are required to register exports of toxic chemicals for $10,000 per certificate, while domestic producers with less of a habit of compliance can save. Additionally, “indigenous innovation” regulations require government contracts to favor products with Chinese IP.
Rising Volatility

Chemical executives view volatility as a major issue because it increases direct and indirect financing costs for feedstock and energy. Volatility makes hedging decisions, contract length, and contract portfolio management important steps. As volatility expectations change, just as important is altering contract mix and terms to reflect the new expectations.

Oil is not the only source of rising energy costs. The “electrical supply is unpredictable and breaking down often,” interviewees point out, and rapid expansion in heavy industry and higher consumption is increasing the cost of electricity. These constraints require significant investment to increase generating capacity and, perhaps more importantly, efficiency in China, which lags developed countries. Investment in electricity generation will likely reduce capital investment in projects that would directly benefit the chemical industry. In summary, greater exposure to volatility makes contingency planning, based on rigorous scenario analysis and probabilistic modeling, essential.

Plan Aims to Restructure Growth Model

China's Five-Year Plans provide industry guidelines for policies, capital allocation, and economic development. This approach is more formalized than in the West, where policies are often not integrated and are implemented with little regard for goals, consistency, synergy, or contradictions among legislation, lending availability, access to equity markets, and the tax code.

China is not a command economy in the traditional Communist sense; it is a hybrid of state capitalism, free enterprise, and industrial policy guidance. However, Five-Year Plans are not just general guidance—they are the business plans for China's government and SOEs. What is written in the plan is executed directly or indirectly, and SOEs align with the plan's goals even if cities and regions weigh them differently.

The current plan's biggest impact on chemical companies is the goal of creating domestic manufacturing champions that are more competitive internationally. Two other important goals are increasing chemical self-sufficiency and establishing an environment in which limited resources are used more sustainably and with a lower environmental impact.

Chinese government planners, often with strong chemical engineering backgrounds, have mapped out the value chains of all major chemical processes as they seek to build self-sufficient capabilities in more commodity areas of the industry. And because the goal is to increase value added by SOEs, they will aggressively seek to add capabilities in specialty and fine chemicals. Multinationals face difficult choices as competing with SOEs in commodities becomes increasingly complex.

Increased Consumption

The Five-Year Plan seeks to strengthen domestic consumption, replacing an export-oriented, job-growth-at-any-price strategy that is no longer sustainable as demand for Chinese consumer goods wanes because of U.S. and European economic problems and continued drops in consumption.
However, encouraging Chinese consumers to spend more is not easy. First, China must improve healthcare coverage and retirement and social security programs. Without such programs, consumers will continue saving at high levels. Income has become more concentrated with the wealthy, and the middle class and poor are spending less. Some economists argue that growth during a recession must come from exports (currently difficult for China), capital spending (already high in China), fiscal stimulus (lever already pulled heavily post-2008), or consumption. In China, because income remains concentrated in corporations that reinvest their profits to create more capacity and new export businesses, consumption remains low, even as incomes have grown.

If China increases its social safety net to encourage spending, it may also have to increase other means of income distribution. While some of this may occur naturally as rural populations join the industrial economy, others may require specific government policy changes. The net result of increasing disposable income will drive consumer spending on products that require chemical raw materials.

China hopes to increase the manufacturing value added by focusing on emerging industries such as renewable energy. Expanding the service sector is also important; encouraging regional development and increasing consumer income in the poorer western regions of China is critical for social stability and political reasons.

All of these goals frame the opportunities for chemical companies if they can position their activities as supportive of the Five-Year Plan. Overall, executives see the plan in a positive light.

**Implications of the Five-Year Plan**

The impact of the Five-Year Plan is broad. Many industries and regions are covered, including industrial upgrades with more mechanization and automation and a focus on R&D and regional rebalancing to move more industry to Western China.

For chemicals, the starting point in the plan is self-sufficiency in key segments, particularly specialty and fine chemicals (see figure 6). The plan or the accompanying commentary...

**Figure 6**

**Implications of self-sufficiency focus, direct and indirect**

**Direct impact**

- **Self-sufficiency**
  - Focus on specialty and fine chemicals (Target: $251 billion market by 2015)
  - Focus on new chemical materials (Target: $41 billion market by 2015)
  - Promote own electricity production

- **Upstream**
  - Establish large-scale petrochemical bases for refining and production
  - Promote coal-to-chemical technology

**Indirect impact**

- **Consolidate** via government-led consolidation through SOEs in steel, cement, machinery, and electronics
- **Upgrade** the industry through higher mechanization and focus on R&D
- **Rebalance** regionally by pushing industries to Western China
- **Reallocate** resources to reduce transportation and energy costs

Note: SOE is state-owned enterprise.
Sources: 12th Five-Year Plan, Auerbach Grayson, Citibank; A.T. Kearney analysis
identifies several chemical segments in which China is a net importer and sets a goal of 80 percent self-sufficiency by 2015. In new chemical materials, the goal is to increase self-sufficiency from 56 percent in 2009 to 76 percent by 2015.

The plan also identifies areas where multinationals outperform domestically owned and SOE suppliers, both in commodity and value-added specialty chemicals.

We see three programs within the Five-Year Plan:

**Restructure sectors through R&D.** The goal is to create production capabilities in key specialty and fine chemicals—with the moves performed by the government and SOEs.

**Help Chinese companies acquire technology.** The companies would gain access to advanced chemical technologies.

**Create national champions.** These champions would compete with multinationals, currently prioritizing steel, cement, machinery, and electronics for government-led consolidation. Chemicals are likely to follow.

Because of these initiatives, multinationals will face increasing difficulties in expanding production capacity and locations, acquiring permits and operating licenses, and competing with stronger SOEs.

In value-added and specialty chemicals, multinationals may benefit in specific niches if the solution fits with China’s objectives. However, this opportunity is balanced by the inevitable government requests for technology transfer, which could lead to a long-term loss of proprietary expertise if not well negotiated or managed.

There are many possible solutions for protecting IP, including the following:

**Emphasize process technology over product innovation.** Process innovation is often more systemic in nature and harder to document with strong cultural components that are more difficult to imitate. Systemic, informational, process, and cultural innovations are also frequently unprotected by patents and less visible to competitors and industrial planners in the Chinese government.

**Decentralize production processes.** Decentralizing production processes, including portions outside of China, can address issues from the Five-Year Plan.

**Improve innovation life cycle management.** One way to do this is to transfer last-generation innovations to China and keep the most current offshore.

**Government Restructures Industries**

The Chinese government’s intent to restructure is starkly illustrated by the rare earth industry. The number of producers has been cut from more than 100 to 20 within two years. Production caps, investment restrictions, and export quotas have been put in place, although the quotas have been criticized as not compliant with the General Agreement on Tariffs and Trade.

The government claims that only by consolidating rare earth producers can new environmental and production regulations be met. Baotou Steel Rare-Earth (Group) Hi-Tech, which owned 43 percent of the global market share in 2011, is the result of the shuttering of nine unlicensed producers without compensation. Twenty-two municipal separation companies will be shut...
down with compensation, and four separation companies will be purchased from governments of autonomous regions.

More generally, the government is using its power to restrict exports of many raw materials. Multinationals have a licensing requirement, and heavy export duties have been imposed. This results in incentives—or the need—for multinationals investing and producing in China to have access to these raw materials. Official communication on this industry restructuring, however, points out that policy objectives are to reduce carbon and sulfur gas emissions, save precious finite amounts of raw materials, and rein in overproduction while preventing pollution from careless production methods.

Multinationals face two choices to meet this challenge: Pass on rising raw material costs—difficult because it could push prices as much as 100 percent higher and affect market share against competitors with lower input costs—or produce in China to gain access to raw materials at prices similar to those operating in China.

The Constraints of Employment Growth

Government concerns about social stability and growth translate into a strong push for jobs. Modernization and industrialization have brought varied changes across regions, along with a widening gap between poor and rich, rural and urban. Urbanization will rise from 48 to 52 percent by 2015, driven by migration from the country to cities. Tension will increase from land seizures and forced moves.

China is large (roughly the size of the United States), but its geography presents challenges. While it has 22 percent of the world’s population, it has only 7 percent of its arable land, of which only 28 percent is high-yielding farm land, 32 percent is low-yielding farmland, and 17 percent is polluted by heavy metals. The country has only 0.74 acres per capita, 40 percent lower than the world average.

There are roughly 35,000 chemical companies in China. History and experience suggest consolidation will occur eventually, and the hand of government will likely push the industry more quickly.

The problem is similar for water. China has 7 percent of global freshwater, and its water-per-capita rates are 75 percent below the world average. In Beijing, the water table has dropped from 15 feet below sea level in 1950 to 300 feet below sea level today. In cities, 90 percent of groundwater and 75 percent of rivers is polluted. This means that 700 million people are exposed to polluted water daily. Looking forward, the World Bank projects that there will be 30 million environmental refugees in China by 2020 because of water stress. Climate volatility from
global warming may increase events similar to 2011, when the worst drought in 60 years affected 37 percent of all wheat fields (or 5.4 million hectares).

Another concern is rising inflation. Twenty percent of grain reserves were sold in 2010 to keep food prices down. Mounting housing prices pose two problems: the risk of a bubble and decreasing affordability.

We project environmental degradation, resource limitations, and pollution to increase tension and inspire protests, even without political issues at stake.


Although China is now a member of the World Trade Organization and has the world’s third-largest economy after the United States and European Union, China still restricts multinationals regardless of size and industry.

For example, international courier service DHL entered the Chinese market in 1986, investing $1.6 billion between 2000 and 2009. In 2009, a revised postal law prohibited businesses offering express mail—only express packages were permitted. Without this one pillar, DHL was in a loss-making business by the end of 2010 and exited in 2011.

Although IP infringement has received less attention lately, it remains a major issue for leading multinationals. Forty-five percent of Japanese chemical companies suffered IP rights infringements between 2009 and 2011, and 30 percent have pursued remedial action.

China is also issuing more than 10,000 new national standards every year, many perceived to have been designed to keep out Western companies. Perhaps more unsettling is the new Chinese law that requires patents to be registered in China first, even if developed elsewhere. The law can also force the surrender of patents if deemed “unfair use.” While not identified by interviewees, the size of this risk does seem one where common action might benefit all chemical multinationals. Even if common action is not pursued, the careful enlisting of local stakeholder allies will be important.

Lastly, corruption in China is widespread. Transparency International surveys over the 2008-2010 period suggest that corruption increased and that most did not think government actions had been effective.

Interview Results

Between June and August 2011, we interviewed 25 senior executives from process and chemical multinationals active in China. These executives’ short- and medium-term sentiments were generally positive, based on the generally strong growth potential of client industries, particularly consumer goods. One executive suggested that the 2013-2015 outlook is brighter than 2011-2012. Despite the push for Chinese national champions, most interviewees saw the newest Five-Year Plan as a positive way to emphasize their strengths.

China is an important market—if not the most important market—for these companies, so they are making substantial investments in China and increasing their hiring.
Most executives understand the many risks of doing business in China and their limited ability to cope or remediate such risks. Some see the need for further improvement in risk reduction. Other findings include the following (see figure 7):

**Figure 7**

**Top concerns and observations of multinational companies**

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<th>Talent</th>
<th>Social unrest</th>
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<tr>
<td>• Qualified Chinese workers prefer domestic companies</td>
<td>• Social instability continues to rise</td>
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<td>• Worker qualifications are difficult to ascertain</td>
<td>• Gap between rich and poor is widening</td>
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<tr>
<td>• Productivity is limited</td>
<td>• Social networks and Internet access may accelerate unrest</td>
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<td>• Salaries are high to lure best people from competitors</td>
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<table>
<thead>
<tr>
<th>Competition</th>
<th>Input costs and volatility</th>
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<tbody>
<tr>
<td>• Domestic players’ product quality is improving and prices are half of Western players</td>
<td>• Difficult to secure raw materials in a closed market; local alliances required</td>
</tr>
<tr>
<td>• Product quality is still not consistent, allowing multinationals to maintain a lead</td>
<td>• Planning and price volatility are difficult to manage</td>
</tr>
<tr>
<td></td>
<td>• Price increases can be passed on in China (more so than in mature markets)</td>
</tr>
</tbody>
</table>

Note: SOE is state-owned enterprise.
Source: A.T. Kearney analysis

- Attracting and retaining qualified staff is a continuing concern.
- Domestic competitors are growing stronger but are not yet fully competitive.
- Some feel fairly protected from unpredictable government actions because they offer high value-added chemicals, which have experienced limited SOE competition.
- Social instability is increasing.
- Planning is fraught with uncertainty, and price volatility is hard to manage.

**Short-Term Outlook**

Most interviewees saw substantial sales growth through 2012—in the high single or low double digits across their product portfolios. However, profitability will become an issue in industries with overcapacity, such as solar cells and automotive.

Some executives saw sales growth slowing, although projections are still high compared to other emerging markets such as Brazil, Russia, and India. Automotive demand is slowing, particularly for smaller vehicles, and construction demand is sluggish because of a perceived bubble and government attempts to reduce speculative investment. Consumers remain cautious, but even with reduced credit availability, overall consumer spending was seen to remain strong.

Interviewees signalled that there will be continued strong investment in areas such as capacity expansion, new plant development, and laboratory facilities. These investments are required to achieve or maintain cost leadership and tend to focus on the Chinese market rather than export markets.
Companies are also working hard to hire Chinese staff for all major functions, particularly in sales, marketing, technical areas, and, to a lesser degree, production. Within technical functions, the focus is mainly on local product adaptation and development.

Markets and Competitive Dynamics

The state of the chemicals market as our interviewees see it can be summarized in three insights: SOEs are becoming more sophisticated, multinationals are generally operating on a non-level playing field, and the Chinese government is using its power to shape its domestic industries.

SOEs’ improved sophistication shows up first in sales and distribution, executives say: Their skills are not as sophisticated in terms of technology, but they are catching up fast. Interestingly, only one executive believed that as SOEs become more capitalist and interested in financial results, competition will become fairer because of SOEs’ integration into the more rule-governed global marketplace. In terms of the playing field, SOEs have obvious advantages with access to government, capital, preferential licensing and regulation, and environmental controls.

All of the goals of the Five-Year Plan frame the opportunities for chemical companies if they can position their activities as supportive of the plan.

Interviewees say that inflation—particularly salaries—is the biggest macroeconomic risk to profits. Chemical multinationals’ overall strategy for coping with macroeconomic risks is having or developing deep knowledge of customers, making costs more variable and flexible, increasing the amount of localization, and developing broader portfolios to minimize the impact of change in any individual business or product line. Multinationals’ risk mitigation tactics are a mix of tactical measures, compliance, and “corporate citizen” actions, including the following methods:

- Demonstrate to government how products support the Five-Year Plan.
- Stay under the radar by not confronting politically connected SOEs, particularly in smaller companies.
- Lobby and manage relationships with government institutions.
- Influence industry standards and norms.
- Stay connected locally, not just at the provincial or national level.

Implications for Corporate Strategies

Every chemical company in China is affected to some degree by the issues we have outlined. But two conclusions are clear. First, a wait-and-see strategy will likely hurt business. Commodity businesses are under threat, and specialty and fine chemical businesses are at great risk of
transfer or theft if brought to China. Second, successfully changing strategies requires foresight. Global corporate leaders will need to understand that the scene is shifting in China, more managerial functions need to exist in China, and business will become more complex (see sidebar: Multinationals in China: How to Know You’re Making the Right Moves).

**Multinationals in China: How to Know You’re Making the Right Moves**

How multinational chemical companies (multinationals) navigate China’s shifting economy will, of course, vary by company. So how do you know you have responded to the change in the right way? There are 11 areas to examine:

**Strategic management and risk management.** Have you institutionalized rigorous processes covering structured, routine business intelligence, scenario planning, and monitoring and reporting, ideally executed by cross-functional teams? Do you create transparency on China- and business-specific risks exposure and do you have customized, operational risk management procedures in place?

**Supplier intimacy.** Do you have programs to diversify supply risks and lock in key sources of supply domestically and abroad? Are domestic Chinese suppliers on your side and will they support you if a proposed government decision adversely affects your business and the supplier’s relationship with you?

**Customer intimacy.** Do you have direct access to key customers and deep knowledge of their goals? Can you spot trends and react quickly? Have you made explicit decisions about where to maintain direct relationships with key customers and key distributors? Have you sought longer-term contracts to lock in relationships?

**Competition.** Do you have a defendable strategy, one with support from key stakeholders and supportive of their and China’s goals? Are you avoiding confrontation with major SOEs with strong governmental support? Have you selected business strategies and markets that support the Five-Year Plan, and are you communicating that with key stakeholders? Are you investing in staying well-connected locally to build support and lobbying capabilities?

**Pricing strategy.** Have you developed activity-based models to understand whether your pricing strategy is supporting your business strategy? Are your pricing strategy reviews based on multi-period strategic plans for shaping industries and ensuring client relationship profitability?

**Cost management and operational excellence.** Have you reevaluated the trade-off between growth and cost management? Are you able to benchmark, understand, match, or improve upon the cost structures of your Chinese competitors today and in the future? Have you created an organization with world-class efficiency and cost structure (comparable to operations in the West)? How quickly are you improving your cost position through continuous improvement and automation?

**Strategic human resources.** Are programs in place to attract and retain important staff? Are programs in place to monitor employee productivity and provide constructive methods of improvement with appropriate incentives?

**Legal and compliance.** Are you spending more time mapping, managing, and monitoring your IP protection programs?

**Financial management.** Have you increased your focus upon improving management and collection of accounts receivable, credit, and terms management? Are you actively hedging currency and commodity fluctuations? Are you using local refinancing options?

**Reputational management.** Are you positioned as a strong player that contributes to China, offering activities that align with the Five-Year Plan and regional objectives? Are you communicating the benefits created by your activities in China and exporting from China, so that government and other stakeholders value your company’s presence over, for example, other competitors or potential competitors that could be created?

**Pride and culture.** Does your culture and brand build a sense of leadership, pride, and team spirit so that you are perceived as an employer of choice—one that employees will seek to work for?
We have mapped these risks, challenges, and uncertainties into four areas (see figure 8):

**Figure 8**
The major challenges fall into four categories

**Competitive dynamics.** This is difficult when dealing with well-funded, increasingly competent, expansionary SOEs.

**Complexity.** The intricacy of being a private, foreign firm in China is not just about competing against subsidized SOEs with low capital costs, but also about understanding and influencing multiple levels and agencies of government.

**Government policies.** Government moves can cause sudden, unexpected problems. These moves include efforts to create national champions, reshape supplier, chemical, and customer industries, achieve self-sufficiency, and add more value in chemical value chains.

**Macroeconomics.** Stability and inflation control have been the norm in China, but this could give way to currency appreciation and reduced government power against inflation.

So what are the consequences of these key issues?

First, every company needs to map out the possible futures for its product area, market, or industry. Scenario analysis and modeling is an immediate need for most companies, but it is also important to think more broadly about which scenarios to examine. Using the past as a reference is not useful if you miss a key change, such as a new Chinese competitor that suddenly operates at a larger scale with privileged access to inputs and capital.
Second, adapting to quick change will be necessary for goal setting, risk transparency, strategic cooperation and partnering, agility and resilience, and localization, mergers, and acquisitions. Let’s look at each of these areas.

1. **Goal setting.** The past is not necessarily the harbinger of China’s future. But when a market shows consistent year-over-year improvement in revenues and profits, it can be hard to react in advance to the idea that growth may flatten and volatility may increase—both key issues for chemical companies in China. As a result, short- and longer-term corporate budgets and plans may need to be adjusted downward if sales and profitability appear overly ambitious. Specific programs must deal with increasing costs and decreasing profitability.

Companies that have not formally measured, set, and communicated targets in areas such as public opinion, media, suppliers, government agencies, and financing institutions will have to better manage stakeholders’ China-related expectations, and even correct overly positive messages and perceptions. More China-related communication effort, sophistication, and variety will be required.

2. **Risk transparency.** Many large companies already have risk management assessment and reporting systems, but they are usually financial rather than operational. In the future, more effort will be needed in mature countries to assess and mitigate stakeholder, operational, market, and currency risks. Because China is so large, macro-level risk analysis is inadequate—competitors in China can emerge at both the regional and national level. This means granular knowledge is required. How other foreign multinationals respond is also a source of risk—competitors may increase their investments, seek joint ventures with Chinese companies, or license technologies that affect other multinationals.

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Create national champions that would compete with multinationals, currently prioritizing steel, cement, machinery, and electronics for government-led consolidation. Chemicals are likely to follow.

China-focused risk management requires transparency on the many ways a company is exposed at the corporate, divisional, business, product, and segment levels. Such analysis needs to be updated and reviewed monthly. Also important is actively managing relationships with parent companies so that senior management is educated about the changes in China’s economy and competitive environment.

3. **Strategic cooperation and partnering.** Now is the time to reevaluate partnering strategies in China. We project a renaissance of partnerships in various formats, including joint venture and partnership opportunities that may have been rejected in the past. Existing partnerships and joint ventures may need to be strengthened or altered to achieve more customer, supplier, and partner intimacy. New partners may offer more potential for shaping marketing, distribution access, and industry standards. In areas where the government tightly controls access to inputs such as feedstock or energy, it will be vital to win over partners with privileged access.
4. Agility and resilience. A more intense competitive environment makes many activities in the value chain more important. Agile decision-making approaches need to replace slow-moving and possibly risk-averse approaches. Better information about markets, regions, competitors, distributors, customers, and government stakeholders will be needed. This requires an increased staff and budget, typically unnecessary in rapidly growing and often supply-constrained markets.

New processes are needed to improve access to key account and market information, gathering and screening data, and to act on that information. These tasks should measure regional and city differences, be analyzed quickly, and swiftly lead to implementation. While scale is important in many industries, so are logistics, service levels, and tailored products to reflect regional differences and major account requirements.

Cross-functional teams will be needed to ensure quick implementation. Training will become more important to ensure peak performance and faster implementation. Decision-making processes that require lengthy approvals and central-office buy-in are particularly damaging. As China becomes the largest market for chemical companies, global operational leadership will be pressured to move to China, particularly for those firms that move to serve China and its export markets. In general, strengthening all China support functions will ensure that the necessary capabilities are available locally to manage the more complex environment. Past market research, benchmarking, competitive analysis, distribution and customer analysis, and customer support metrics will need more attention and resources.

5. Localization, mergers, and acquisitions. Localization will be more important. It will occur in terms of developing Chinese suppliers, expanding direct distribution reach to tier 3, 4, and 5 Chinese cities (of which there are many), and designing products tailored to the national or specific regional market. This kind of expansion will challenge existing reporting and information systems.

Localization may require paying more attention to Chinese customer companies as they expand internationally. This will change multinationals’ organizational requirements as they try to manage relationships and transactions and coordinate with global buyers—and take on all of the associated complexity and risk. Many Chinese-owned companies going abroad for the first time will experience hiccups even in the best cases and severe problems in the worst—issues that increase the risk for multinationals that work with them.

For some, localization may trigger innovation because vertical integration is attractive in markets with compressed margins. Vertical integration reduces risk by locking in downstream demand and unreliable sources of inputs. Combining margins from two levels in the value chain may also increase returns. Vertical integration also provides a way to create new sources of
value that are safer than introducing advanced technologies and risking demands by local companies to transfer or borrow.

Services will likely be a key part of any protection strategy, including downstream services and financing in addition to adjacent services that may not appear central to the chemical business but which may create goodwill with key stakeholders. How multinationals navigate China’s economy will, of course, vary by company.

New Ground Rules

China is an enormously attractive, high-growth market, but the rules of competition are changing dramatically and quickly. The government recognizes the attractiveness of its market and will use that to obtain concessions from multinationals. Therefore, what worked in the past needs immediate review.

Senior executives at chemical multinationals will have to educate their central leaders, change the basis of competition, develop supplier and customer intimacy, invest more in attracting and retaining the best employees, improve market and competitive analysis, and develop a new emphasis on stakeholder management. All of this needs to happen while China’s private and state-owned enterprises ramp up the competition.

Heading into the future, the chemical companies that do much more, and do it much faster and much better, will be the winners in modern China, in the long and the short term.

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