Chemicals

The right chemistry*

Finding opportunities and avoiding pitfalls in China's chemical industry

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A new frontier emerges for the global chemical industry.

The rise of China is sending ripples through the global chemical industry. While it still represents only a small share of the global chemicals market, its climbing rates of chemical importation and consumption, combined with its rapidly growing economy, expanding middle class, and inland urbanization, make China a market no international chemical company can afford to ignore.

Add to these trends China's various favorable governmental policies—such as preferential tax treatment for foreign investment that offers intellectual property (IP), research and development (R&D) capabilities, or advanced technology—and it's no wonder that many international chemical companies have already set up operations there and that others are seeking appropriate points of entry.

Yet challenges abound in the China market, and success is not simply there for the taking. Companies looking to capitalize on the growth of China's economy and chemical industry must consider the potential obstacles in their path—including the fact that China's chemical industry remains tightly regulated, and opportunities often depend on which areas of foreign investment are encouraged or restricted by the government. In addition, difficulties surrounding logistics, rising costs, the war for talent, and intellectual property protection create risks for any company setting up or expanding operations in the country.

The good news is that these potential pitfalls are not unnavigable. With intelligent planning and a clear understanding of the local market, companies can go a long way toward mitigating the risks, surmounting the challenges, and reaping the opportunities inherent to the China market.

This paper, prepared by PricewaterhouseCoopers in cooperation with the Economist Intelligence Unit, offers insight into these market opportunities and challenges and maps out many of the entry points that international chemical companies should consider as they prepare to open the door to this new frontier.

An in-depth discussion

China holds untapped opportunities—and challenges—for international chemical companies.

China's massive growth is driving the opportunities in its chemical industry. In 2007, China's overall economy expanded by 11.4%—the fastest rate in 13 years—while industrial output grew by 18.5%. The Chinese economy is now the world's fourth largest and its chemicals industry is keeping pace, enjoying growth across a range of sub-sectors from agrochemicals to commodity chemicals. China is the world's largest importer of chemicals and the third-largest consumer of chemicals, yet it represents only 8% of the global market, leaving plenty of room for further growth. Indeed, demand for petrochemicals and plastics is expected to rise between 6% and 8% each year over the next decade, outpacing growth in Asia (5.4%) and the world (3.6%) for the same period. As a whole, China's chemical industry is expected to grow at an average rate of more than 10% through 2016.

For some companies, the appeal of rapid growth is compounded by favorable government policies. Tax breaks entice foreign companies to set up shop in one of China's chemical industry parks. These are usually situated near developed coastal cities such as Shanghai or Tianjin, which have good infrastructure and large labor pools. China's government clearly signals the types of investment it is looking for, making it easier for new market entrants to select their niche. Companies in sub-sectors that bring R&D activities to the country are officially listed among China's "encouraged foreign investment industries."

Opportunities are also increasing for chemical companies with high environmental standards. The central government favors investment involving pollution-control technology and has pledged to spend $175 billion to improve the environment in the next ten years. This suggests particular opportunities for industrial gas companies, which can take advantage of China's push to cut nitrous oxide emissions from its many coal mines. Curbing automobile emissions has great potential as well since cities such as Beijing add more than a thousand new cars each day, causing pollution levels to soar.

But, as stated previously, entering this market is not without its challenges. Intellectual property protection and infrastructure are improving, but are still far from perfect. The government views chemicals as a strategic sector and regulates it tightly, confronting foreign companies with a shifting web of laws and regulations.

Great walls: regulations and tax policies

In addition to enacting preferential policies aimed at luring foreign investment, China's government erects barriers in sectors it wants to protect. These barriers are highest in bulk chemicals, with petrochemicals getting particular scrutiny from regulators. (The construction and operation of refineries, for example, are currently classified as "restricted," meaning no foreign investment is permitted.) Companies in specialty chemicals face fewer barriers because the government worries less about shielding state-owned enterprises in that sector from competition. This type of selective laissez-faire regime can be advantageous for companies that produce dyestuffs, textile chemicals, citric acid, or certain fine chemicals.

The regulatory landscape varies within China's different regions, and new players must pay close attention to local regulations as well as national ones. This can require a multi-track approach. "We have a government affairs department, a regulatory affairs department, and we also have a chemical association who advises us and informs us when there are changes," says Michelle Jou, managing director at Bayer Material Science Trading in Shanghai.

Tax rules governing foreign investment change rapidly. A new tax law that took effect in January 2008 eliminates a two-year tax holiday previously enjoyed by many foreign-invested manufacturing companies and harmonizes the tax rate for Chinese and foreign companies. Previously, foreign companies paid a corporate tax rate of 15% and were granted tax breaks lasting several years. Chinese companies paid a 30% corporate rate and enjoyed no holidays. (Foreign companies considered "high-tech" by the central government still enjoy preferential treatment, as do those that put their own intellectual property into the invested entity.)

The central government also scaled back or eliminated tax rebates for exported chemical products, and imposed new restrictions on companies engaged in the processing trade business—the importation of raw and semi-manufactured materials, which are finished in China and then re-exported. All of this compounds the challenge of achieving strict regulatory compliance and maintaining smooth relations with officialdom.

Planes, trains, automobiles, and other bottlenecks

Despite the recent harmonizing of foreign and domestic corporate tax rates, the lower rate will remain in effect for companies that invest in China's economically underdeveloped western region. But moving operations westward may pose logistical hurdles that more than offset the advantages of being in a lower tax bracket.

Limited transport infrastructure means that foreign companies often have difficulty ensuring timely delivery of locally sourced goods or raw materials. While China has launched a massive drive to build new roads, railways, and airports, transport bottlenecks remain, a situation that's exacerbated by growing demand for raw materials and finished goods from towns and cities. China's infrastructural shortcomings came to light in early 2008 when severe snowstorms disabled a portion of the country's electric rail system, knocking down power lines and blocking tracks. The disruption stranded hundreds of thousands of travelers and also halted rail shipments of coal, which fuels most Chinese power plants, leaving several large cities without electricity during the weeklong Lunar New Year holiday.

Even as China spends significantly to expand its transportation infrastructure, growing demand can cause capacity constraints. For this reason, foreign companies should pay close attention to planned transportation routes that could affect their supply chain. Taking full control of supply chain management can be so difficult that some companies create dedicated subsidiaries for this purpose. Others choose to partner with a domestic company or form a joint venture. "In the supply chain area, we spend on average more in China compared to developed countries," says Bayer Material Science's Michelle Jou. "The costs are due to a combination of negotiating infrastructure and linking of the right players in the market." Foreign companies must ensure their domestic partners have the right equipment and expertise to meet their long-term needs. Many companies currently operating in China regularly train and audit their partners.

Along with incomes, costs are rising

In addition to supply chain and infrastructure costs, chemical companies operating in China are seeing a steady increase in the cost of their day-to-day operations. China's official rate of consumer-price inflation hit a 12-year high in May 2008, pushed up by surging food and energy prices. The Economist Intelligence Unit forecasts that China's inflation will average 6.5% in 2008 (up from 4.8% in 2007) before slowing to an average of 4.3% in 2009.

At the same time, a new labor law that took effect this year mandates higher pay and more rights. Companies must sign an agreement stating that they will keep employees on the payroll for a certain period of time. Another of the law's key provisions states that if a company employs a worker for three years, it must sign an employment contract that may make it difficult to fire that worker, effectively guaranteeing the person a job for life.

Another factor in the cost equation concerns the management of relations with new stakeholder groups. Traditionally, citizens' ability to form interest groups and hold public protests has been forbidden under Communist Party rule. While this remains true for political issues, citizens have begun pushing the boundaries where economic and environmental issues are concerned. In 2007, in the southern coastal province of Xiamen, a local protest convinced the government to relocate a chemical plant that was already under construction. While such occurrences are comparatively rare, chemical companies should expect to spend more time (and money) addressing the concerns of local citizens in the future.

China's opportunities and challenges

Opportunities	Challenges
Rapidly growing economy	Tightly regulated chemicals sector
Upwardly mobile middle class	Logistical/supply chain constraints
Preferential tax treatment for foreign investment offering intellectual property, R&D capabilities, or advanced technology (particularly environmental protection)	Rising cost base
	Intellectual property concerns
	Competition for talent

Chemical sub-segment trends

A number of chemical industry sub-sectors are seeing particularly strong growth in China. Here's a look at three of the top market niches.

- Agrochemicals: With 7% of the world's arable land and 22% of its people, China is perennially focused on boosting agricultural productivity. Its agrochemicals sub-sector has comparatively few restrictions on foreign investment, so multinationals such as Syngenta and Monsanto have large operations in the country, as do several large, state-owned Chinese enterprises. Yet despite the presence of some large players, China's agrochemical market remains fragmented, with more than 200 companies selling crop protection products. Many of these companies have succeeded in marketing non-branded products internationally. Chinese producers, for example, sell generic glyphosate in the US for as little as US$10 per gallon, compared with a competing branded product that sells for more than US$20 per gallon.

- Bulk and specialty chemicals: Historically, China's chemicals industry has focused on manufacturing bulk and commodity chemicals. Recently, however, that focus has started to shift. Through a series of preferential policies, tariff reductions, and investment incentives, China has begun strengthening its specialty chemicals production. This strategy reflects a desire by the government to move up the value chain in manufacturing, to attract more R&D expertise, and to bring more advanced technology products to the market.

- Industrial gases: China's use of industrial gases is growing along with its industrial sector, reaching an annual rate of about 10%. China currently makes up 4% to 5% of overall global demand, just behind the US and Germany. Yet its industrial gases industry remains constrained by infrastructure bottlenecks. Transportation issues as well as erratic coal production and electricity shortages have confined many industrial gas companies to the larger cities and industrial zones along the coast.

In the trenches: the war for talent

Rapid economic growth has led to a “gold-rush” mind-set, with many foreign companies scrambling to set up and expand operations in China. This, in turn, has created the need for employees with broader and deeper management experience. Given China’s relatively recent transition to capitalism, however, that experience is in comparatively short supply. The result is a market where companies eager to attract and retain the best talent all pursue the same small group of increasingly sought-after—and therefore expensive—people.

This dynamic has led to high staff turnover amongst skilled managers, who switch jobs frequently to lift their salaries. Senior executives interviewed for a report published a few years ago by the Economist Intelligence Unit estimated that, on average, talented managers switched jobs every 15 months. The problem is aggravated by the poaching of experienced and high-potential managers. Geographical factors also come into play, with talent harder to find the farther one moves inland—a consequence of recent historical employment opportunities drawing the majority of potential recruits to the coastal cities.

Foreign companies struggle to differentiate themselves from the competition in a way that helps attract and retain the best people. Large foreign companies with an established presence in China have an advantage in this regard, partly because of their well-known reputations and partly because, over the years, they have developed relationships with local entities that can serve as talent incubators. Bayer, for example, partners with the Shanghai Petrochemical Academy to recruit students for internships and management training. Many companies offer internal job rotation programs that send Chinese employees to Europe or the US. Such initiatives are highly valued by Chinese employees, and help foreign companies brand themselves as committed to fostering employee development.

Knowledge is power: intellectual property

Many foreign companies, especially those entering China for the first time, want a local partner to assist in overcoming some of the challenges presented by the market. A partner can help navigate regulatory barriers that complicate foreign investment. Partners can also provide access to well-established sales and supply chain networks, and may be knowledgeable about local culture and business practices. They can be vital in managing relationships with local government officials. Finally, they provide an easy way for a foreign entrant to gain market share quickly.

But partnerships are not without risk. One particularly fraught area is intellectual property, where the dangers range from brand infringement to reverse-engineering of protected technology. China strengthened its IP protection laws shortly after joining the World Trade Organization in December 2001, but enforcement remains spotty. Few cases are won by foreign litigants, and settlements are small. Intellectual property is a particular concern for specialty chemicals and agrochemicals companies. Many foreign companies create firewalls between production units, limiting each facility to a single step in the production process. Others keep important technology out of China altogether. For this reason, the headquarters of many companies hold onto their intellectual property and are reluctant to share it in a joint venture.

As noted above, foreign companies that contribute intellectual property to their venture may get tax breaks and a warmer welcome from government officials. In return, these companies must dedicate a certain percentage of spending, plus a specified number of employees, to research and development. Some companies view this as a cost of establishing themselves in the China market. Dow Chemical, for example, is expected to finish building a large research and development center in Shanghai in 2008.

Case study: Nova Chemicals

Nova Chemicals, specializing in basic chemicals and plastic resins, is a relatively recent entrant into the China market. Partly for that reason, the company took its time finding a niche and selecting a local partner. Once the right partner was in place, however, Nova moved aggressively, plunging into the chemical market with a factory in the southern city of Ningbo. The facility produces Arcel, a resilient foam resin used as packaging by the electronics industry. “For shipping electronics it has two benefits: It minimizes damage and it takes up less space,” says Tim Wong, a Nova general manager in China.

Nova chose to partner with Loyal Chemical Industrial Corp., the world’s largest manufacturer of expandable polystyrene resins, materials used in construction and packaging. Linking up with Loyal gave Nova market expertise and an existing infrastructure it would not have been able to develop on its own. The partnership took two years of meetings and discussions to finalize, and Nova did not share its proprietary technology until it was sure that Loyal would live up to its name. (Even now, Nova protects its intellectual property by producing the key component of Arcel outside of China.) “Entering the market, you have to really think about what is valuable to you, and be willing to invest the time and energy to protect it,” says Wong.

Companies that invest in China now will reap the greatest benefits.

Is your company China-ready?

Executives thinking about entering one of the world's most promising and potentially most punishing markets should ask themselves several questions:

- Am I in this for the long haul? Many companies find that making a profit in China is a long-term project. Those under pressure to hit near-term financial targets may find their enthusiasm flagging during the initial period of getting things up and running.

- Have I clearly mapped all relevant supply routes? This includes thinking about backup routes or modes of transportation that can be used in the event of a disruption.

- What do I bring to the party? Perhaps most important to ensuring success in China is to not show up empty-handed. China is acutely aware that its market is highly attractive to foreign investors, and officials know that this gives them leverage to make demands. Chinese laws and regulations preferentially encourage foreign companies that bring R&D capabilities, advanced technology, other forms of intellectual property, environmental protection systems, innovative manufacturing processes, or a combination thereof to the market.

- Am I willing to share what I have? In almost every case, the government's aim is to take foreign technology and produce its own version. That may be the price of admission to the Chinese market, but not all companies are willing to pay.

- Does my company have an environmental impact strategy in place? Industrial pollution is a major concern for China, and the government discourages dirty industries or those without a plan for minimizing environmental impact.

Paths to entry

Once a company has assessed its preparedness and feels confident that it is ready to navigate the various obstacles posed by China's regulatory and logistical infrastructure, it must determine its best entrance strategy. Recent changes in Chinese law have increased the ways in which international companies can set up operations in the country.

Most entry strategies follow one of three main paths, from relatively cautious to more aggressive.

- Begin China operations with a marketing office. This strategy allows companies to source or sell products without setting up a manufacturing base, and provides a way to test the market and assess product demand.

- Enter into licensing and royalty contracts with local companies. Under such an arrangement, an international company can provide trademark and technology expertise but cannot set up its own infrastructure.

- Establish a production base. This strategy is the most aggressive and can be done either by forming a wholly owned foreign enterprise or through a joint venture with a local partner. (Equity joint ventures with local partners are often still required, particularly in petrochemicals.) Many chemical companies have chosen to set up their own production base in China to simplify logistics, reduce operating costs, and make it easier to monitor changes in competition and customer demand.

  Establishing joint ventures in China has become significantly easier in the past few years. Moreover, domestic companies are under pressure to sell their products globally and to adopt more advanced technology. As they do so, tie-ups with multinational companies will become even more attractive to them, broadening the pool of potential partners for foreign chemical companies.

The growth in China's industrial production and chemical consumption provide unmatched opportunities for international companies. Companies with expertise in specialty chemicals and environmentally friendly technology may have a distinct edge, and companies that invest now will be at an advantage as the market continues to expand. Regardless of what type of chemical expertise a company has, however, it must enter carefully to mitigate the regulatory and infrastructural risks. Those who are able to do so successfully stand poised to reap the greatest benefits of China's booming economy and growing chemical industry.

Foreign investors who bring IP, R&D, and environmentally friendly technology have the edge as China's market continues to expand.

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