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Dueling with Dragons

China's Rapid Rise in Heavy Equipment

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China's Rapid Rise in Heavy Equipment

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AT A GLANCE

Chinese companies are gunning for global leadership in heavy-equipment industries that were out of their reach not long ago. Established multinationals, however, can battle back—and have done so—by making bold moves to develop winning business portfolios, gain market access, and alter their business models.

Fierce Competitors

Chinese companies have achieved rapid success in several heavy-equipment industries and now have more than one company in the top-five global rankings.

The Four Phases of Global Expansion

Chinese companies have moved through four phases of growth—newcomer, national champion, global player, and global leader—as they have expanded overseas. Each phase brings new challenges and implications for the global competitive dynamics.

Multinationals' Response

Multinationals can compete by focusing on areas in which they retain advantage, lowering costs, and reorienting their organization around developing markets.

In 2006, the top seven wireless-telecom-equipment suppliers were all venerable companies based in the West with long, proud heritages. Today, five years later, four of those companies have been acquired or have merged, and two young Chinese companies, Huawei Technologies Co. and ZTE Corporation, have broken into the top five.

Huawei and ZTE represent the new China—a country of many companies that have developed new forms of competitive advantage over their more established rivals. These young businesses are gunning for global leadership in industries that were out of their reach not long ago.

Established multinationals can battle back—and have done so—by shifting their businesses to developing markets and focusing on services in which they hold a competitive lead. In wireless-telecom equipment, for example, Nokia Siemens Networks has aggressively embraced the East; half of its employees are based in developing markets. And nearly two-thirds of Ericsson's operating margin came from services in 2009, compared with one-half in 2007.

The Boston Consulting Group (BCG) recently studied seven large-equipment industries in which Chinese challengers are global players or have the potential to become so. During our examination of these industries, several key lessons for all multinationals emerged. The first is to understand these new competitors.

Fierce Competitors

All except one of the equipment industries BCG examined have at least one Chinese company among the top five global players. Four of the top five suppliers in the photovoltaic, or solar panel, industry are Chinese; in the coal-power-equipment industry, three are Chinese. The equipment industry for rail-rolling-stock has two Chinese companies in the top five, while wind power and power transmission have one Chinese player each. Civilian aerospace equipment is the only surveyed industry without a Chinese presence in the top five companies.

Five key factors explain the rapid rise of Chinese players in heavy-equipment industries. First, these companies can build their capabilities by serving their domestic market, which accounts for up to half of global demand. Second, Chinese companies have lower labor costs and considerable scale advantages driven by the size of the domestic market and the standardization of product offerings. Chinese coal-power-equipment companies, for example, have an estimated average cost

advantage of 25 percent over established multinationals. Half of that cost advantage is attributable to scale.

Third, the state treats large-equipment industries as strategic, and it supports them through standards setting, domestic-content laws, limitations on foreign involvement, industry consolidation, and financial nurturing. All seven heavy-equipment industries studied were part of China's previous five-year economic plan and exceeded both qualitative and quantitative targets set by the government. In its most recent five-year plan, the government set its sights on a new group of industries, including specialized manufacturing equipment, nuclear energy, information technology, biotechnology, and "green" energy. The State-owned Assets Supervision and Administration Commission, the governing body for China's largest state-owned enterprises, for example, is investing $15 billion in the development of electric cars and other green technologies.

Favorable technology-transfer and indigenous-innovation policies allow Chinese businesses to quickly absorb foreign technologies.

Fourth, favorable technology-transfer and indigenous-innovation policies allow Chinese businesses to quickly absorb foreign technologies. In less than five years, China has moved from importing key components for rail equipment to exporting them. For established multinationals, these technology-transfer deals can be the price of admission to the Chinese market.

Finally, the Chinese challengers benefit from a state-coordinated export strategy. Financing plays a key role in these heavy-equipment industries and can become a strong competitive advantage. China's state-owned banks provide nearly $35 billion in export financing annually (often with preferential terms) that is unavailable to Western players, and the government offers diplomatic support.

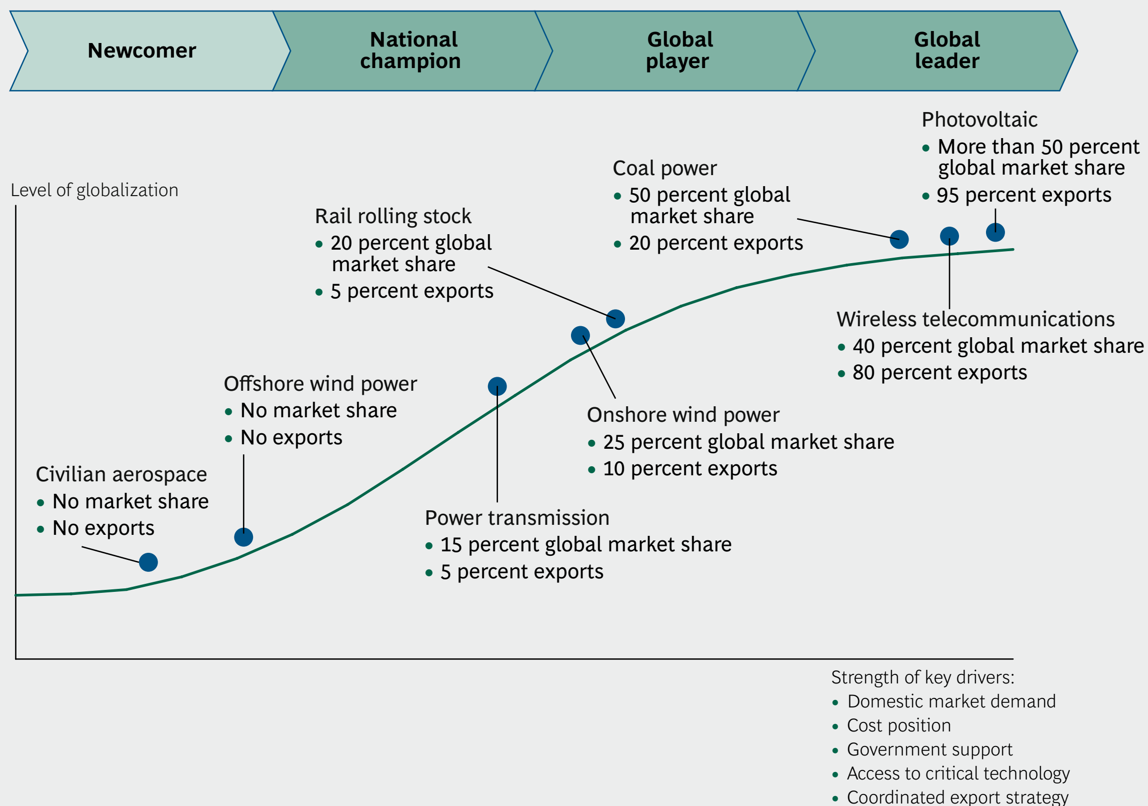
The Four Phases of Global Expansion

The second lesson for multinationals is to understand the ambitions of their Chinese competitors—and where they are on their globalization journey. We have divided this journey into four phases. (See Exhibit 1.) In some equipment industries, such as coal power, wireless telecommunications, and photovoltaic, Chinese companies have reached the final phase and become global leaders.

Established multinationals in these equipment industries need to make hard choices about their strategies. In April 2011, General Electric, for example, announced plans to build the largest photovoltaic-panel factory in the U.S.; its goal is to become a major player. Similarly, First Solar, based in Arizona, is in discussions with leading Chinese companies on large solar projects. Since 2002, it has manufactured enough thin-film photovoltaic panels to power 2 million households.

In other industries, multinationals have more room to maneuver if they fight back quickly and aggressively. In onshore wind-power, for example, Chinese companies have made rapid advances in their domestic market and overseas, but they are not dominant worldwide. They are in the global-player phase. In industries such as power transmission, companies have had domestic but not yet international success and are in the national-champion stage. Companies in the final phase, newcomer, are still spreading their wings. (See the sidebar "Snapshots of Five Industries.")

Exhibit 1 | Chinese Competitors Progress Through Four Phases to Achieve Leadership



Sources: Industry reports; BCG analysis.

Multinationals' Response

The final set of lessons for multinationals are the steps they need to take in order for China to become the land of opportunity. There are plenty of success stories involving multinationals in China. For example, General Motors has built a 14 percent market share, up from less than 2 percent ten years ago, largely through joint ventures with local players.

Honeywell, one of the most successful multinationals in China, has moved research and development centers to China and delegated key strategic decisions about the Asian market to its leaders in China. Honeywell has developed a turbocharger for small vehicles in partnership with a local company. This product is specifically tailored to the Chinese market and complies with local efficiency and emission requirements.

Otis Elevator Company, which has been active in China for more than 100 years, has six factories and a major research and development facility in the country. In order to capture inland growth, Otis is building a plant in Chongqing in southwest-ern China, more than 1,000 miles from Shanghai. Otis has segmented its four brands in China to appeal to different customer segments: Otis targets high-end installations, Xizi Otis and Express sell less-expensive elevators and target the

SNAPSHOTS OF FIVE INDUSTRIES

To show the strength of the Chinese challengers and the shape of the market, we provide an overview of five of the seven industries we examined.

- *Coal Power.* Chinese players have quickly emerged as global leaders in coal power equipment as a consequence of satisfying the nation's voracious appetite for coal power. Shanghai Electric Group, Harbin Power Equipment Company, and Dongfang Electric Corporation collectively have a 90 percent domestic market share. Exports accounted for 22 percent of revenues of Chinese coal-power-equipment companies in 2009, up from 5 percent in 2004.

- *Rail Rolling Stock.* Spurred by the nation's rail-building spree, Chinese players have an 85 percent share of the domestic market for rail equipment and a 20 percent share of the global market. Foreign companies can act only as subcontractors on rail projects in China but still have advantages in rail signaling and services.

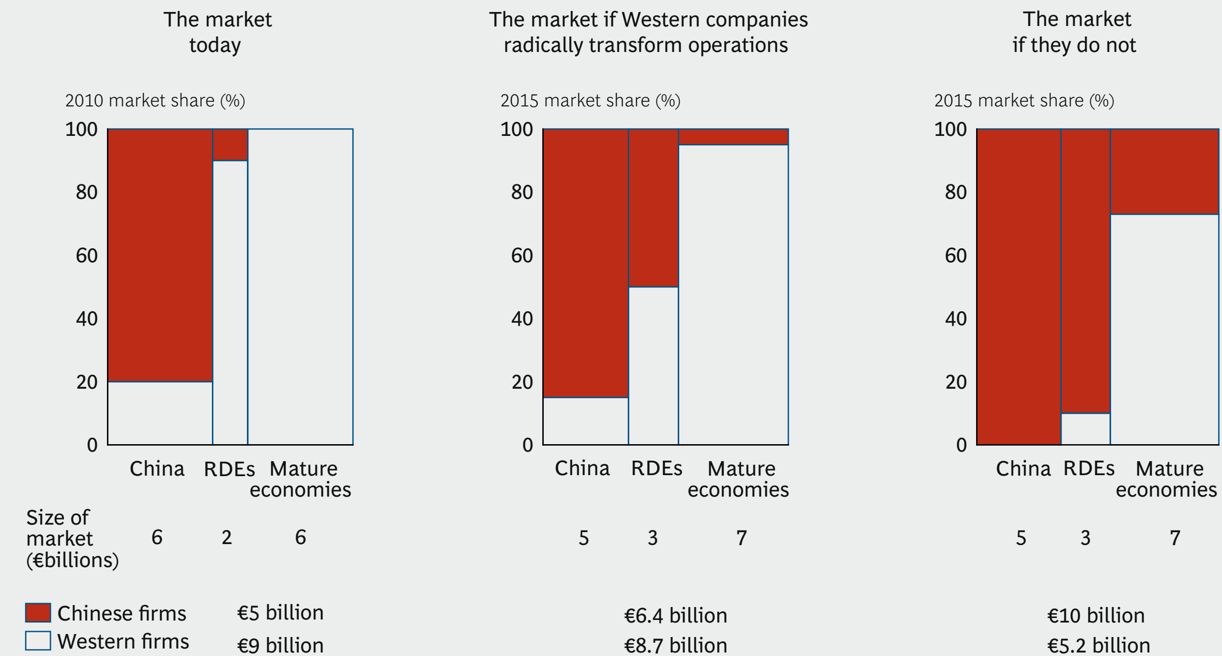
- *Wind Power.* This is a tale of two markets: the $5 billion onshore-equipment market that is mainly centered in China and is maturing and the $1 billion offshore market that is much smaller but growing 30 percent annually and is located largely in Europe. Chinese companies control 90 percent of the onshore domestic market, which makes up 40 percent of global demand; they command close to a 25 percent cost advantage over competitors.

  The Chinese are bit players in the offshore market. Offshore wind units need to be able to resist the elements and have low failure rates, characteristics that play to the strengths of established players. However, recent technology transfer agreements with Western multinationals may change the game soon.

- *Power Transmission.* Chinese companies have a modest 10 percent global market share, a reflection of the fragmentation of the Chinese industry landscape. However, industry consolidation led by the State Grid Corporation of China could generate scale advantages, resulting in a greater cost advantage and export potential.

- *Civilian Aerospace.* Chinese demand for commercial aircraft will grow sharply over the next ten years, but with a 15 percent to 20 percent global share, the market in China will still be smaller than those in Europe or North America. The Commercial Aircraft Corporation of China, the largest Chinese civilian aerospace manufacturer, has reached a deal with Bombardier to work cooperatively on future aircraft design and marketing. It is currently negotiating partnerships and technology transfer agreements with suppliers. These negotiations could shape the industry over the next decade.

Exhibit 2 | How the Market for Rail-Rolling-Stock Equipment Might Develop



Sources: Industry reports; BCG analysis.
Note: Data captured for very-high-speed and urban rail segments only; RDEs = rapidly developing economies.

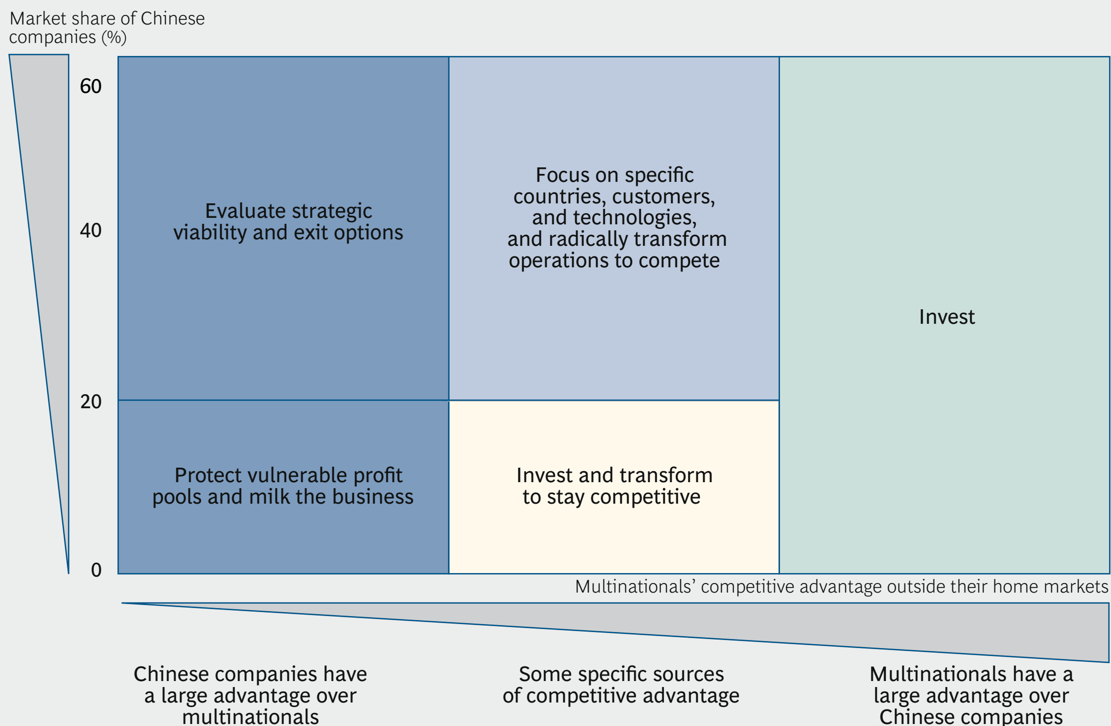
fast-growing small-city and Western markets, and Sigma is export oriented. This customer segmentation has helped Otis significantly increase its market share in China over the past decade.

The success of such companies shows that multinationals can thrive in China and other rapidly developing economies if they understand, embrace, and modify their operations to fit the market. Most of the industries BCG studied are still in play. But multinationals need to act swiftly and with conviction. Exhibit 2 illustrates how multinationals in the rail-rolling-stock-equipment industry can not only maintain their industry leadership but also how they can lose it. China is the trump card.

Below, we offer a five-plank program to enable multinationals to meet the Chinese challenge and maintain industry leadership.

Build a winning portfolio. Companies need to quickly and honestly evaluate their strengths and vulnerabilities against Chinese competitors for each strategic segment—and then determine their options. (See Exhibit 3.) Multinationals should be especially concerned about industries heavily under the influence of the five drivers of success: domestic market demand, a favorable cost position, government support, access to critical technology, and a coordinated export strategy. Companies should gain ground in their industries if they have a winning plan to reshape their organization, operations, and business model. Multinationals that are able to anticipate the industries Chinese challengers are likely to pursue can take action to

Exhibit 3 | Multinationals Need to Actively Manage Their Portfolios



Source: BCG analysis.

strengthen their leadership. The medical-device industry, for example, recognized the Chinese threat in the 1990s, and several multinationals turned it into an opportunity by moving manufacturing to China. As the speed of transformation in the wireless-telecom-equipment industry demonstrates, though, complacency is not an option, even when multinationals have large market shares.

Address the cost gap. The estimated average cost gap between Chinese companies and multinationals ranges from 20 percent in power transmission to 25 percent in the onshore wind-power and coal-power markets and 35 percent in rail rolling stock. If multinationals can reduce the gap to 5 to 10 percent, they should be able to stay competitive in developing markets. But to bridge the gap, they will need to transfer a significant portion of their manufacturing, research and development, and sourcing to these lower-cost markets. It is a large operational and cultural change, but one that has a sizable payoff for those that successfully make the transition.

Win market access. Multinationals should have three primary goals in seeking market access: to win market share in China, limit Chinese companies' expansion into other developing markets, and defend their market at home and in other developing economies. There are at least three ways to accomplish these goals.

First, multinationals can create "smart" joint ventures that allow companies to take advantage of low costs in China, gain market access, and acquire government

support without sacrificing too much upside. Many Chinese companies still need Western technology and, more important, a route to international markets, both of which can serve as bargaining chips in negotiations. ABB opted for the joint-venture approach, establishing a series of such ventures in China starting nearly 20 years ago and covering such categories as switching gear and transformers.

Second, multinationals can use India or other developing economies as a beachhead to expand into new markets. Increasingly, changes in global market share will be determined in the fast-growing developing markets, where many Chinese challengers have been active. India is especially attractive for equipment manufacturers because local players cannot meet demand and are seeking support from international players.

Finally, multinationals should build entry barriers in developed markets to keep Chinese companies at bay. This means continuing to invest in their core strengths and franchises, such as service levels, sales and distribution capabilities, and intellectual property protection, in developed markets. To defend mature markets, multinationals should preempt the acquisition of local companies by Chinese players.

There is a large pent-up demand in the middle market for products that are "good enough." To play in this segment, multinationals will need to modify their ideas about product quality and service levels.

Create the right business model. By now, most multinationals understand that they cannot merely export their prevailing business models and practices to China, but they do not know what to do differently. One alternative is to pursue the often-overlooked middle market. Historically, multinationals have built top-quality products for the high end and have ceded the rest of the market to local players. However, there is a large pent-up demand in the middle market for products that are "good enough"—offerings that are a step up from entry-level but are not the highly engineered products created for the top of the market. To compete in this segment, multinationals will need to modify their ideas about product quality and service levels. They will also have to move research and development, product development, and local marketing to developing markets, and partner with local companies in order to achieve some of the same advantages Chinese challengers have.

Another option for multinationals is to sharply accelerate the development of their services business. This can make up for the loss of revenue from products that customers view as commodities and, more important, build strong barriers to Chinese players by locking in their installed base.

Refocus the organization. Many of the prior four planks implicitly require organizational shifts, especially the shift of positions to lower-cost locations. But a deeper organizational response is needed. Companies may need to make exceptions to the current organization structure to ensure that China gets the attention and resources it requires. At Honeywell, for example, operations in China and India are the only ones managed separately by a senior executive who reports directly to the CEO. Companies may also need to shift decision making to developing markets. Nokia Siemens has moved the headquarters of its services business unit to Delhi. And Cisco has created a second headquarters in Bangalore that is as important as its San Jose base.

The challenges facing multinationals are not unique to large-equipment industries. Chinese competitors have the will and the capital—and are quickly acquiring the skills—to compete in most major industries and markets. Those companies that fail to make rapid adaptations to the quickly changing competitive landscape should brace themselves for tough times. Those that embrace the challenges of China will enjoy the fruits of a fertile marketplace with a bright future.

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