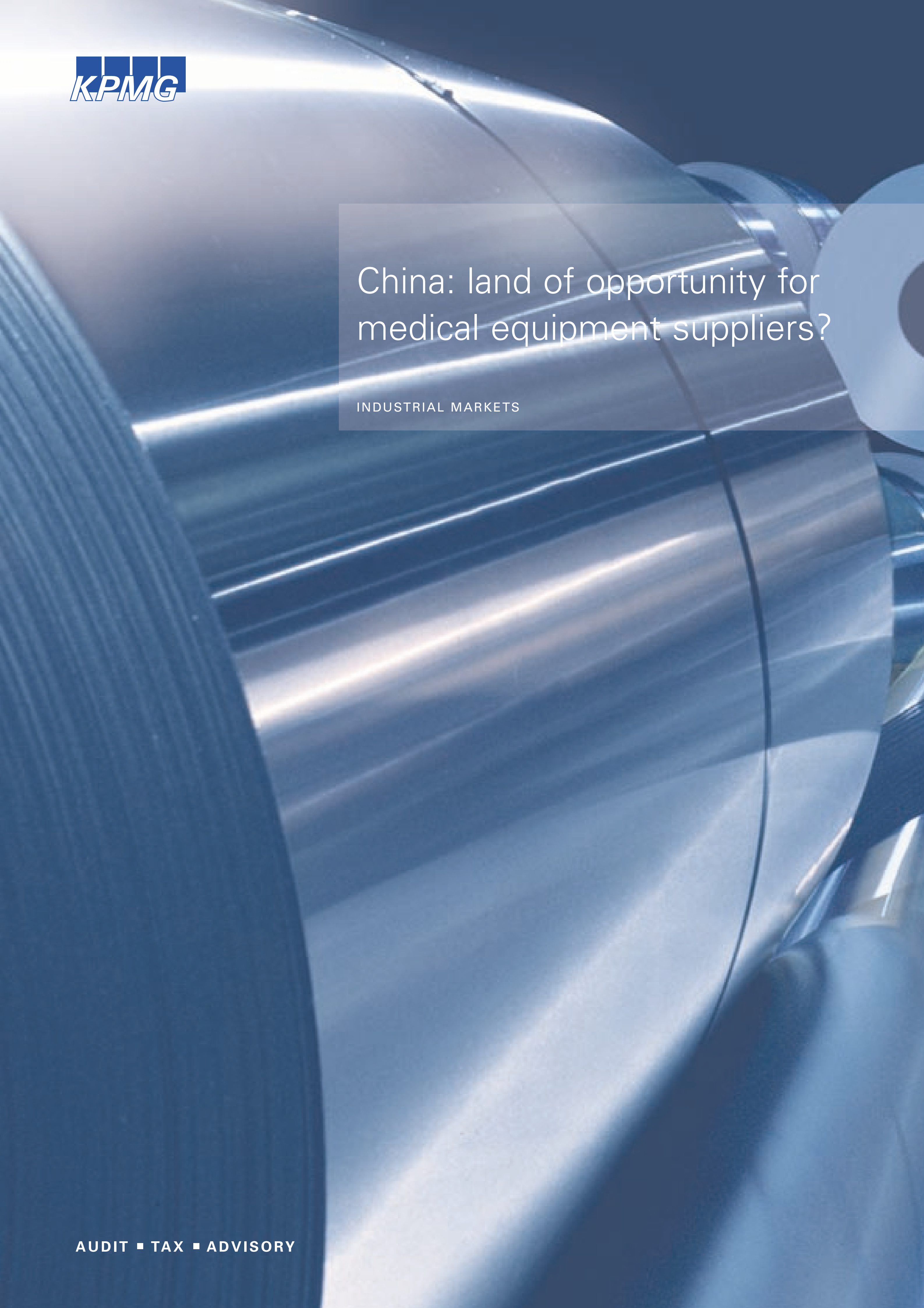

China: land of opportunity for medical equipment suppliers?

INDUSTRIAL MARKETS

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In brief:

- China's medical equipment market is growing at double-digit pace. For foreign companies, notably those in the mid-price segment, there are significant market opportunities to be had.
- With its growing and ageing population, coupled with its need for affordable technology that local companies cannot yet deliver, China is an attractive market for overseas suppliers.
- Greenfield manufacturing, joint ventures or acquisitions of local companies represent potential entry strategies into the Chinese market. Increasingly, larger international companies are setting up research and development (R&D) facilities in China.
- Intense competition at the low end and operational difficulties due to China's 'developing market' status provide a challenging market environment.

1. Foreign companies lured by China

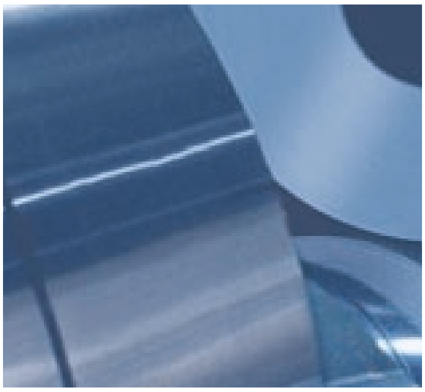
Low-cost manufacturing, a large and ageing population and poor penetration of common medical equipment combine to make China a hugely attractive import market.

China, with its low-cost manufacturing and massive market potential has emerged as a bright spot for many multinational suppliers of medical equipment. Consider too that this is the most highly inhabited nation in the world, with an increasingly ageing populace – and this market's worth is set to escalate.

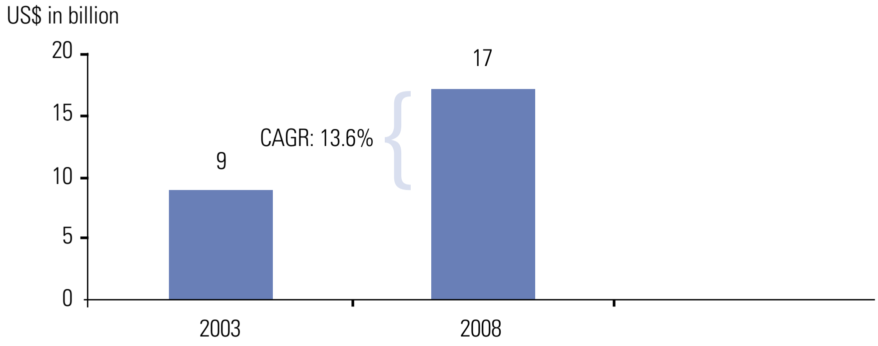
Over the past two decades, growth in the medical equipment market has even outpaced China's strong economic growth.

- The total sales revenue for medical equipment in China has grown over 22 percent per annum over the last three years.
- In 2003, the market stood at US$9bn. That is forecast to almost double to US$17bn by 2008.

Unless otherwise noted, the information contained in this brochure was obtained through a survey conducted by KPMG in China in November 2004.

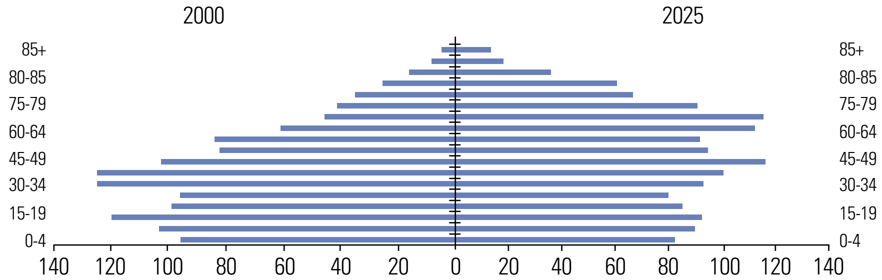


China's medical equipment market and its growth trend, 2003-2008



Source: Datamonitor - Industry Profile Report, Healthcare Equipment and Supplies in China, July 2003

And although China's medical equipment market is still significantly smaller than the U.S., the EU or Japan, its long-term potential cannot be underestimated. By 2025, the number of people in China aged 65 or over is expected to top 198 million – the demand for medical devices such as pacemakers is forecast to soar.



Source: US Census Bureau, International data base, July 2003

Just how much scope is there in this relatively untapped market and how easy is it to access?

- The market penetration of common medical equipment in Chinese hospitals is low, compared with average Western standards. Take biochemistry analyzers, currently installed, on average, in around half of Chinese hospitals. This falls to around 10 percent in those with fewer than 100 beds. And there are only 30,000 emergency-care ventilators across China, falling to just one percent in hospitals with fewer than 100 beds.

- China's entry into the World Trade Organisation (WTO) has helped create a more conducive environment, enabling multinationals to tap into this vast domestic market and use China as a low-cost manufacturing base from which to export to other countries in the region.

- As foreign access to China's medical equipment market becomes easier following changes to the regulatory environment, the process for importing goods into China becomes increasingly transparent.

2. The Chinese medical equipment market

Medical equipment that uses advanced foreign technology is in demand in China. Imported products dominate key sectors and account for significant market share.

In 2003, companies from the United States, Japan and Germany were the dominant exporters of medical equipment to China. Between 2000 and 2003, imports increased by over 90 percent to US$2.2bn – 24 percent of the total market. Imports range from sophisticated imaging equipment to dental and generic supplies.

The market is fairly parallel. Foreign players dominate the top end with imports or locally produced equipment that use innovative technology. Domestic products, limited in range and using less advanced technology, are more cheaply available and occupy the lower end of the market.

China's massive hospital network is poorly equipped. But the market for foreign companies is limited to the top quartile.

China's health network is vast. But it is underfunded and marked by contrasts.

There are over 67,000 hospitals nationwide. Of these, 75 percent (50,250 hospitals) are non-grade facilities. They appear poorly equipped with fewer than 20 hospital beds in rural areas. As a consequence, the market for imported medical equipment narrows to around 1,000 class III hospitals and 5,500 class II hospitals.

- Class III hospitals tend to be the best and largest in the country, often with between 200 and 500 beds. These may offer complex clinical diagnoses, education and R&D study.
- Class II are smaller but offer a reasonable level of care. They tend to have more than 100 beds, focus on less complex clinical diagnosis and may be capable of training employees.

Budgets for Chinese hospitals tend to be far smaller than their overseas counterparts.

- Class III hospitals tend to focus their investments on medical equipment imports – one Shanghai hospital spent around US$6m almost exclusively on imported devices in 2003. "Class III hospitals always enjoy a zero-tariff when importing medical equipment, whether it is for self-use, education or R&D purposes" said the sales director of an international medical equipment supplier investing in China.
- The budget for small county-level hospitals is significantly smaller. "Often less than US$25,000" according to the same source.

Chinese market calls for mid-range medical equipment, with unique technology

The Chinese market is calling for relatively advanced, more moderately priced equipment at competitive prices. Currently, neither domestic nor imported products meet this requirement – they are either pitched too low or too high. Suppliers that can combine price and quality will have a clear head start in China.

"The most likely popular medical equipment in China is going to be middle-priced devices with relatively advanced technology, possibly two to three generations behind cutting-edge devices in advanced countries."

Sales director for a Hong Kong-invested medical equipment manufacturing joint venture in China

Given the number of hospitals and potential market size, it is this middle market – cheaper, better quality products that deploy more enhanced technology than locally produced equipment – where the opportunities for Western importers are most likely to be found.

At the bottom end of the medical equipment market, where a large number of primarily domestic manufacturers produce commodity products cheaply, foreign suppliers struggle to compete. Most Chinese hospitals neither use nor can they afford cutting-edge technology. Take the medical electro-system sector: high-end medical systems account for just 25 percent of the market in China, compared with an average 55 percent globally.

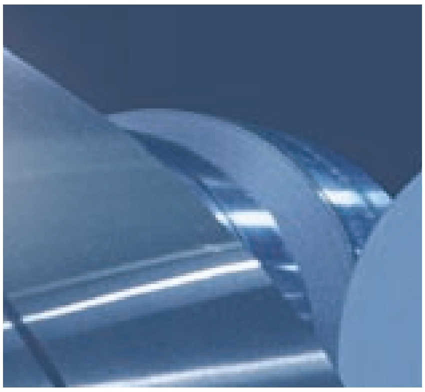
At the other end of the spectrum, a small number of multinationals such as GE, Siemens, Philips and Toshiba compete in the advanced medical equipment market and dominate nearly 95 percent of it. No Chinese domestic company is currently seen as a direct competitor to these international players.

China's 9,000 domestic producers of medical equipment occupy the low end of the market and present little competitive threat.

Domestic medical equipment companies typically lack the resources of their multinational competitors. They tend to be small to medium-sized, private or state-owned and fewer than 200 have annual sales in excess of US$20m.

In 2003, the total market share for domestic medical equipment manufacturers was less than 50 percent. The table on page 5 illustrates that foreign-invested companies account for many of the largest manufacturers in China.

However, local companies have certain advantages, such as a network of business contacts, local knowledge and the ability to tailor products and support to local customer needs, and this should not be underestimated.



"Domestic producers have certain advantages in the sale of middle-end products because they provide user-friendly versions for Chinese doctors and regular training courses to hospitals. Importantly, there is no cultural difference."

Doctor at a Class III hospital in Beijing

Top ten medical equipment producers in China (by sales)

Ranking	Company	Sales revenue (USD in millions)	% of total sales	Product range
1	Hang Weo General Electric Medical Systems Co. Ltd.	166	7.3	CT, MRI, X-ray
2	OMRON (Dali) Co. Ltd.	108	4.7	Nebulizers, blood pressure monitors
3	Jiangsu HongBao	91	4	Basic surgical equipment
4	Shandong Zibo Shan Medical Devices Co. Ltd.	62	2.7	Disposable syringes, transfusion equipment, blood filtering devices, urine containers, gynecology equipment
5	Rexton (Suzhou) Hearing Systems Pte Ltd.	60	2.6	Digital hearing aids
6	Neusoft Digital Medical Systems Co. Ltd.	58	2.6	CT, MRI, X-ray, ultrasonic scanner, color Doppler systems, HIS and PAC systems
7	GN ReSound China Co. Ltd.	57	2.5	Digital and non-digital hearing aids
8	Beijing Wandong Medical Equipment Co. Ltd.	49	2.1	X-ray machines, dental equipment
9	General Electric Medical Systems (China) Co. Ltd.	48	2.1	CT, MRI, X-ray, ultrasonic scanners
10	HongBang Electronic (Shenzhen) Co. Ltd.	41	1.8	Infrared ray thermometers, blood pressure monitors

Source: KPMG China Medical Equipment Report 2004

3. The regulatory landscape

The regulatory landscape in China is changing. Government initiatives aimed at creating a better operating environment are making China more conducive to overseas suppliers.

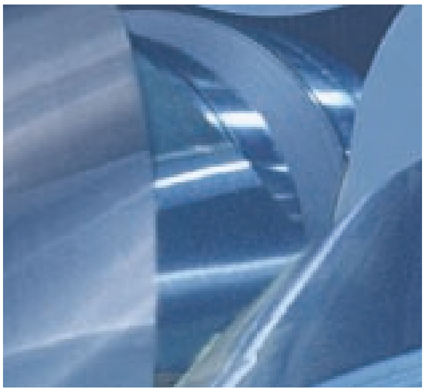
China's entry into the World Trade Organisation in December 2001 earmarked the lifting of rigid restrictions such as high tariffs, VAT, quotas and import licenses on medical devices. Tariffs have now dropped from 11 percent to around five to six percent, making China a far more enticing target market.

By the end of 2004, China is expected to provide full distribution rights to foreign companies, including commission agent services, wholesaling, retailing, franchising and other related services.

Historically, the Chinese healthcare sector was regulated by four government bodies which, for foreign entrants, made application and registration confusing and opaque. However, in early 2003, the State Food and Drug Administration of China (SFDA) became the only agency to regulate medical equipment manufacturing, imports and distribution. It has greatly simplified bureaucracy for foreign participants.

Other regulatory improvements are in the pipeline which will potentially have positive impacts on the medical equipment sector too:

- Duty-free imports of certain categories of equipment, such as pacemakers and endoscopes, for self-use or educational purposes, to be permitted. As a consequence, it is hoped that imports of higher-end technology products will be encouraged into China.
- An embargo of dubious marketing practices – to include a crack-down on false or inflated claims of efficacy.
- In 2006, after a three-year phase-in, Good Manufacturing Practice (GMP) will become the industry standard. This may prompt a tidal wave of closures in the highly fragmented, local medical equipment industry. When GMP was introduced in China's pharmaceutical sector, one-third of the industry failed to meet the standards and ceased production.
- Even if there are new rules in place, the necessary change in mindset is likely to take a little longer.



"A company entered the Chinese market in 1988/89 and found its products copied two to three years later. Today, there are eight dedicated factories counterfeiting its products nationwide."

An industry expert on a European medical equipment company

4. Operational issues for foreign entrants

Despite the scale and predicted opportunities, potential entrants to this Chinese market need to keep their heads. Intellectual property issues and dubious selling practices are just some of the challenges that existing participants have to tackle.

Intellectual Property (IP) infringement

Like any other industry sector, foreign medical equipment companies will face tough competition from locally manufactured generic and counterfeit devices. While China has a full set of IP laws (including patent law, copyright law and trademark law) weak enforcement has led to widespread concerns among small and large medical equipment companies.

The government's actions are undoubtedly moving the industry in the right direction, but for the near future at least IP infringement will remain a significant issue in China.

"There have clearly been instances where we were at a disadvantage – but superior technology also provides us with some advantage."

Executive at a European medical equipment manufacturer

Sales practices

The Chinese method of marketing and selling is a commonly cited problem among foreign medical equipment manufacturers.

Hospitals in China are required to use a tender process when purchasing new equipment. Although a marked improvement on practices a few years ago, the tender process is still difficult for new entrants.

The sales environment continues to lack transparency and is characterized by under-the-table dealings. Financial incentives, 'red pockets' and kickbacks still exist and create an uneven playing field for companies that choose not to compete on this basis.

However, where products have a clear competitive advantage, many industry participants claim that success is possible in China without resorting to underhand practices.

"It is a lengthy and complex process to apply for the license. Some provinces have especially tight controls over granting medical equipment licenses."

Sales director at a Hong Kong based equipment manufacturer in China

Other issues

Medical equipment manufacturers, consulted for the purpose of this report, cited other operational issues too:

- The availability of skilled labor is an increasing constraint on growth among foreign medical equipment companies. Competent employees with the requisite skills – especially at management level – are expensive and increasingly difficult to find in China.
- Applying for production and sales permits can be cumbersome. It typically takes at least 12 months to get approval. The applicant is required to submit original and independent data based on tests conducted by recognized third parties. Reuse of data previously submitted to another agency (such as the U.S. FDA) is not currently permitted.

5. Market entry issues and strategies

Greenfield manufacturing is an increasingly popular entry route into Chinese markets. It works on two levels: it meets local demand and provides a low-cost global sourcing base.

As a competitive investment destination with low labor costs, multinationals are persuaded to move high-tech and high-value production to China. Many of the major medical equipment companies have invested heavily in setting up their own production facilities in China.

- General Electric (GE) aims to make China its global production center for medical equipment. By 2005, local purchase and sales volumes are forecast to top US$600m. GE also established a US$26m industrial park for medical systems in Beijing in 2003. The park, which caters for medical equipment R&D, manufacturing, sales and after-sales services, represents one third of GE's total global CT scanner equipment production.
- Hitachi Medical Systems (Suzhou) Corp., a wholly owned subsidiary of Hitachi Medical, has moved production from Japan to its Chinese subsidiary. It expects to increase locally produced equipment from around 50 percent to between 70 and 80 percent in the next few years.
- Toshiba Medical expects its medical equipment sales in China to hit US$500m by 2010, representing 10 percent of its global revenues.

"Greenfield is a good choice for foreign entrants because cultural differences are a critical issue in existing joint ventures. How to harmonize the relationship with a Chinese party is a tough challenge for foreign investors."

Sales director at leading Chinese medical equipment manufacturer

In spite of the low labor costs, one needs to consider potentially lower quality and productivity levels in China, which might outweigh some of the cost advantages compared to other production locations.

Local producers with mid-range products and ties to hospitals are potential partners for foreign entrants.

Joint ventures, formerly the preferred investment vehicle, are increasingly falling out of favor. However, tie-ins with local players – either through a joint venture or by acquisition – should not be sidelined. Longer term, as organic growth potential decreases and the markets and competitive landscape in China matures, associations of this type may prove especially pertinent. Local companies may often have a complementary product range and an established distribution network in hospitals, as well as contacts within government bodies.

- Philips recently teamed up with Neusoft, a leading local firm in the domestic market. This enabled it to extend its portfolio to include more low- and mid-range products and to benefit from Neusoft's extensive ties with Chinese research and hospital communities.
- Providential Holdings' wholly owned subsidiary, ATC Technology Corp., signed an agreement to acquire 96 percent of a leading Chinese high-tech medical equipment manufacturer, Shenzhen Lifetech Scientific Inc.

R&D activities are also migrating to China

As multinationals increase their manufacturing presence in China, investment in R&D facilities is on the upswing too. It reflects the fact that the Chinese market is likely to develop further and that medical equipment must be increasingly tailored to local market conditions.

- Siemens Medical Solutions Group recently announced R&D investments in Wuhan and in Shenzhen to complement its ongoing R&D investment in Shanghai and Suzhou. The US$3.6m Shenzhen R&D base will be part of its magnetic resonance business group and is the only facility outside Germany to conduct related R&D for Siemens.

Conclusions

With its double-digit growth and ageing population, China is attracting overseas medical equipment suppliers. The domestic providers occupy the low-price end of the market, the multinationals the top tier. But it is the middle market, where the demand for quality goods – whose technology is perhaps two to three generations back down the line – at affordable prices will provide most opportunity for foreign entrants.

Still a developing country, China lags behind many Western nations in terms of its regulatory environment. Lack of transparency and regional differences in interpretation are among the factors that continue to make China a challenging market in which to do business. However, great strides are being made – notably since China's entry into the WTO – and longer term China looks set to pay dividends for early movers in this market.

The phase-in of Good Manufacturing Practice may also see a number of domestic suppliers unable to meet the grade, potentially creating additional entry points for foreign suppliers at the lower end of the market as well.

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