



## Asia Today: What Medical Device Firms Need to Know

*Find out why more companies are outsourcing to Asia, and learn more about some recent trends there—including the growth of Vietnam.*

**Fredrik Nyberg**, Biomedical Strategy Consultants Pte Ltd

As an outsourcing destination for medical device OEMs, Asia continues to attract a great deal of attention. OEMs that are not already sourcing components or contract manufacturing in Asia are very likely to at least have contemplated the possibility of doing so. It is, of course, a major decision that requires a significant amount of background research and should not be taken lightly. But for many companies, it is becoming an imperative.

As of press time, China once again was featured in the news regarding its latest health-related scandal: milk products tainted with melamine hospitalizing thousands of children. This deals another major blow to the country's manufacturing reputation after last year's scandals related to dangerous toys and pet food. These events demonstrate how government regulatory and watchdog bodies simply cannot keep up as the economy grows at breakneck speed. Moreover, they reinforce the need

to conduct thorough due diligence when evaluating prospective manufacturing partners and, perhaps, to examine alternative sourcing locations within Asia.

In spite of the bad rap areas such as China have received in the press lately, there are many reasons a US medical device OEM may want to consider outsourcing its manufacturing to Asia. The reasons most commonly cited relate to driving costs down:

- Benefit from lower labor costs
- Reduce component costs
- Minimize overhead and tooling costs
- Focus resources on core businesses
- Consolidate production facilities

Two important outsourcing drivers that are cited less frequently are improved access to Asian markets and product lifecycle management.

An increasing number of medical device OEMs manufacture in Asia to meet demand from Asian markets and improve market access and service to

Asian customers. In addition, contract manufacturing in the region, especially of full box-build assembly, gives the OEM the option of drop shipping product to Asian end users.

Given the problems (perceived or actual) in some Asian countries with the lack of enforcement of intellectual property rights, many device OEMs choose not to manufacture their very latest, most innovative products in Asia. Instead, older products due to be superseded are given a design makeover to enhance manufacturability and dramatically reduce costs. These products often are “de-featured” to meet the requirements of emerging markets. The outsourcing initiative now has become an integral part of the company’s global marketing and product lifecycle strategy.

### **Recent Trends of Interest to Device Manufacturers**

Along with the reasons OEMs are choosing Asia as an outsourcing hub, there are some recent trends worth noting.

### **Supply Chain Logistics**

Airports, roads and ports are being upgraded across Asia. The vast improvements in infrastructure only can bode well for the future of contract manufacturing and inter-regional sourcing.

The nearly completed Kunming-Bangkok Expressway is the first international expressway from China. It starts in Kunming, the provincial capital of Yunnan province in southwestern China, and ends in Bangkok, Thailand. The route also will link to Malaysia and Singapore, which already have excellent inland connections.

The expressway is approximately 1,900 km (1,180 miles) in length—about 730 km (455 miles) in China and about 250 km (155 miles) in Laos. It is jointly funded by China, Laos, Thailand and the Asian Development Bank. It undoubtedly will create a new strategic supply chain corridor in Southeast Asia.

Another infrastructure mega-project with significant supply chain implications is the new Yangshan deep water port just

## Asia Tips, Red Flags and "Watch Outs"

• **Evaluation framework.** Objectively evaluate potential outsourcing destinations in Asia against set criteria that matter to your organization. These may include local labor and overhead costs; country stability (political and economic); proficiency in English; workforce suitability; intellectual property enforcement; and so on.

• **Start small.** This may seem obvious, but a medical device OEM new to Asia always is better off starting with limited component sourcing rather than embarking on a complex box-built assembly transfer.

• **Language barriers.** In countries such as India, Singapore, Malaysia and the Philippines, English is widely spoken. However, in China and Taiwan the language barrier can be a problem. A popular solution is to work with an English-speaking contract manufacturer based in Singapore or Malaysia with facilities in China.

• **Communication issues.** Cultural barriers and vast geographical distances inevitably complicate communications. Weekly telephone or video conferences can help but will never replace face-to-face meetings.

• **High mix/low volume.** A high-volume production house may not be the optimal partner to run the small to medium production volumes that are typical in the medical device industry.

• **Quality documentation and reference checks.** Ensure that your Asian partner has all relevant quality certifications, such as ISO 13485, and has medical industry experience. Relevant past experience is essential.

• **Intellectual property policies.** It is essential to understand local intellectual property policies, laws and enforcement of such laws.

• **Corrupt business practices.** This can be a major concern in many parts of Asia, including China, Vietnam and India. It is much less of an issue in Malaysia and a non-issue in Singapore. In fact, in the 2008 Corruption Perceptions Index published by Transparency International, Singapore was ranked fourth behind Sweden, Denmark and New Zealand. The United States was ranked 18th.

south of Shanghai at the mouth of the Yangtze River. To overcome the growth limitation of the old Port of Shanghai, the new port is being built on offshore islands connected to the mainland via the third-longest bridge in the world.

Throughput is expected to exceed 30 million TEUs (20-foot equivalent units) in 2008, boosted by Yangshan's third-phase expansion. With container volume of 26.15 million TEUs last year on the back of more than 20% growth, Shanghai surpassed Hong Kong for the first time in 2007 to become the world's second-largest container port. Singapore remains the world's biggest container port with 27.9 million TEUs.

In addition, as frequent travelers will have noticed, a number of major Asian airports have been upgraded, extended or rebuilt entirely in recent years: from Beijing and Shanghai-Pudong to Bangkok, Kuala Lumpur and Singapore's new Terminal 3. Air cargo volumes in Asia continue to grow. Last year, Shanghai, for example, ranked fifth in the international airport cargo hierarchy, thanks to a 15.5% surge in volume to nearly 2.5 million tonne.

### The Rise of the IPO

An increasing number of medical device OEMs are establishing their own local IPO, or International Procurement Office, in Asia. In particular for OEMs that have not yet embarked on their own local manufacturing in Asia, setting up an Asian IPO is a low-risk means of getting closer to components vendors. Moreover, it provides an outstanding learning ground and center for intelligence gathering for company executives evaluating contract manufacturing on a larger scale.

A recent Accenture study showed that international procurement offices have considerable potential to help companies achieve high performance. The study found that:

- One-quarter of companies reduced their overall procurement costs by 30% or more after launching an international procurement office in China
  - 7% are saving in excess of 50%
  - One-third expect savings of 30% or more within three years
  - Four out of five companies believe that their international procurement offices are meeting or exceeding expectations

Some medical device IPOs in Asia are staffed by expatriates seconded from headquarters. Increasingly, however, Asian procurement offices are led by locals—they know the culture, the language and local negotiating tactics. Needless to say, it is essential that communications with between the Asian IPO and corporate headquarters run flawlessly.

### Box-Build Assembly

Medical device OEMs have been sourcing injection-molded parts, printed circuit-board assemblies and various sub-assemblies from Asia for many years. However, the trend to outsource full box-build assembly to Asia is more recent.

The transfer of box-build assembly to Asia is complex and requires several steps. The one step in the process with possibly the greatest potential for costs savings is the localization of the box-build components. An OEM should expect its Asian box-build assembly partner to lead the effort of identifying local component vendors and maintaining the ongoing relationships. This entire step can take one to two years to complete.

### China's Talent Crunch

The number of Chinese university students majoring in engineering has grown exponentially in recent years. However, there are growing concerns about their ability to adapt to a workplace where innovation and risk-taking are of critical importance.

In a recent survey by the American Chamber of Commerce in Shanghai of US-owned enterprises there, 37% of the companies responding said recruiting talent was their biggest operational problem—more than the number who cited regulatory concerns, a lack of transparency, bureaucracy or the infringement of intellectual-property rights

China has 1.6 million young engineers, more than any other country. In fact, 33% of university students in China study engineering compared with 20% in Germany and just 4% in India. However, the educational system emphasizes theory over teamwork, reducing the pool of available talent suitable to work in multinationals to just 160,000.

This talent crunch is only going to get worse as more businesses, both domestic



***Vietnam has been hailed as the next favored destination in Southeast Asia for components outsourcing. Overall, the country's manufacturing sector remains fairly basic, but the cost of production and attractive government incentives mean foreign investors are moving in.***

and foreign, expand their operations. Forty-four percent of the executives at Chinese companies surveyed in a recent McKinsey report claimed that insufficient talent was the biggest barrier to their global ambitions.

### **Vertically Integrating**

As profit margins of Asian contract manufacturers become razor thin, many dream of one day developing their own brand of medical devices selling globally directly to hospital end users. Some larger contract manufacturers can afford to integrate forward through mergers and acquisitions, whereas many smaller ones get stuck trying to serve and compete with global medical device OEMs.

A notable success story is that of Opto Circuits (India) Ltd. The Bangalore-based contract manufacturer of pulse-oximeter sensors recently acquired German stent manufacturer EuroCOR GmbH and US patient monitoring company Critical Care Systems Inc. (Milwaukee, WI). For similar reasons, Chinese Mindray recently acquired Datascope's patient monitoring business (Montvale, NJ).

### **Emerging Markets: Vietnam**

Narrowing the focus within Asia, trends within Vietnam warrant discussion as well, given the growth of outsourcing occurring in this region.

Many people's view of Vietnam as a manufacturing destination changed in 2006 when Intel Corp. announced that it would increase the size of the assembly and test facility it was building in Vietnam from 150,000 square feet to 500,000 square feet and raise its investment from \$300 million to \$1 billion. The new Vietnam facility would become the largest single factory within the Intel assembly and test network. Intel was to become Vietnam's largest foreign investor. Production will begin in 2009 and eventually could employ 4,000 people.

Vietnam has been hailed as the next favored destination in Southeast Asia for components outsourcing. Overall, the country's manufacturing sector remains fairly basic, but the cost of production and attractive government incentives mean foreign investors are moving in. Many small components companies from Singapore, Malaysia and Taiwan also have established production capacity in Vietnam to ensure price competitiveness.

Some observers already are suggesting that Vietnam will become a more popular outsourcing destination than either China or India in the next five years.

With a population of 83 million and a gross domestic product per capita of only \$3,000, Vietnam has the second-highest gross domestic product growth after China.

In addition, 96% of Vietnam's population is literate. Also note that 80% of the graduates from Vietnamese colleges and universities hold science degrees, making Vietnam a particularly good destination for technology outsourcing.

However, not everyone has had a positive experience in Vietnam. Some OEM manufacturers argue that the country simply combines the worst attributes of China, India and Thailand—the poor infrastructure of India, the rigid communist government of China and the small market size of Thailand.

\* \* \*

The options available to medical device OEMs planning to outsource manufacturing to Asia are many. A robust, objective evaluation framework is a necessity to determine the optimal location and identify the best manufacturing partner.

Asia is a dynamic part of the world experiencing rapid growth and dramatic change. It pays to understand the trends and dynamics of the industry, as they may determine whether a new outsourcing venture will fail or succeed. ❖

---

*Fredrik Nyberg is a managing partner at Biomedical Strategy Consultants Pte Ltd., Singapore. Fredrik has spent 24+ years in the medical device industry and has lived and worked in Asia since 1990. He can be reached at [fnyberg@biomedstrategy.com](mailto:fnyberg@biomedstrategy.com).*