

The content of this article is provided by the Department of Investment Services, MOEA

The Status Quo of Taiwan's Medical Devices Industry

(I) Supply & Demand of the Medical Devices Industry

In 2006, Taiwan's medical device industry had a total revenue of US\$2.14 billion, generated by 500 companies, with an average revenue of US\$4.2 million each. Taiwan has a workforce of about 16,350 involved in medical devices. The current status of the medical device industry in Taiwan is shown in Table 3. The medical device industry is a fast emerging high tech industry, including diagnostic devices, disease treatment devices, general medical assistance equipment, and patient aid products. According to the statistical data, medical device has the highest growth rate in Taiwan's biotech industry, and its annual revenue has a great increase from US\$ 2.2 million in 1992 to US\$2.14 billion in 2006. Electronic clinical thermometers, digital hemodynamometers, power wheelchairs and ventilators reach 30% of the global market share with an export value of US\$914 million, import value of US \$1.39 billion, and domestic demand value of US\$2.65 billion.

Table 3. Current Status of the Medical Device Industry in Taiwan (2005/2006)

Industry	Medical devices	
	2005	2006
Revenue*	1.84	2.14
Company (Number)	484	500
Workforce (Number)	15,000	16,350
Export value*	0.84	0.90
Import value*	1.24	1.37
Domestic sales vs.export	54 : 46	58 : 42
Domestic market demand*	2.24	2.62

*Units: US\$ billion

Source: Biotechnology and Pharmaceutical Industries Program Office, MOEA, 2007

The Domestic Revenue, Domestic Demand, Import and Export Value of Taiwan's Device industry are shown in Table 4.

Table 4. 2005-2006 Taiwan Medical Device Production, Import and Export

Unit: % in Billion NTD

FY	Domestic Revenue (A)	Exports (B)	Imports (C)	Domestic Demand (D)	Growth Rate of Domestic Demand	Exports Percentage (B/A)	Import Dependence Ratio (G=C/D)	Self-sufficient Ratio (1-G)
2005	590	270	395	715	100.0%	45.8%	55.2%	44.8%
2006	697	293	447	851	119.0%	42.0%	52.5%	47.5%

Source : Pharmaceutical Industry Technology Development Center, 2007

(II) Gap in Industry Supply Chain, Investment Niche and Prospective Foreign Investors

At present, Taiwan has many advantages including a highly organized industry network and an excellent production and development of the medical device industry. Having a critical technology, successful marketing, and product certification are among some of the industry's challenges or bottlenecks, while [how to work together between globally renowned companies and medical device manufacturers in developing countries, and how to create effective strategies in the highly competitive market are some of the important concerns and key issues for Taiwanese companies.](#) In recent years, there is an emerging trend for large medical device manufacturers doing OEMs to gradually give their non-core production activities to other companies and instead focus more on the development of their technology research and product design center. There is therefore OEM business opportunities in the medical device industry. In the past, Taiwan has accumulated rich experiences and resources in the high tech industry.

Accompanying those advantages, it is expected that Taiwan will be able to seize OEM opportunities from foreign medical device manufactories and form an OEM business. The current state of OEM development strategies in the medical device industry in Taiwan has found a prospect for the OEM development of medical devices. Instead of competitively lowering the production prices, medical device companies are advised to improve their product quality instead. Consolidating the upper and lower stream of supply chain and broadening the industrial scale to improve the overall competitiveness. Since the regulations of a country will affect the company's managerial strategies, it is essential for Taiwanese medical device companies to provide thorough services to seize or extend the cooperation opportunities with foreign medical device companies. As a result, the more resources and efforts spent on research and development, the more rewards are reaped. [The technological transfer and interaction between two companies lead to some performance issues. Generally speaking, the problem usually begins when the company releasing or transferring the technology is less willing even when the recipient company has the ability to adopt quickly to the new technology.](#) Taiwan is a leader in the manufacturing of medical devices, producing diagnostic test kits and equipment and mechanical products, such as portable electrocardiograms, motorized vehicles for the elderly, and digital thermometers, blood pressure and glucose monitors, and pulse oximeters. With the healthcare industry shifting its focus from treatments and therapies to disease prevention and wellness, Taiwan's medical device companies are well-positioned to capture those new global market opportunities.

(III) Major Suppliers in Taiwan

(1) Medical Device Industry Supply Chain

Medical device is one of the fast emerging and major industries promoted by the Taiwan government. Short-, mid-, and long-term plans focusing on developing potential medical device products have been mapped

out. Short-term plans will focus on clinical trials/bio-equivalence, clinical animal experiments, biotech-related contract manufacturing, bioinformatics, biochips, drug development. The mid- to long-term plans will focus on gene diagnostics and gene therapy, stem cell technologies, and artificial tissues and organs. It is hoped that the development of these key technologies and products will support the successful expansion of the island's medical device sectors and companies.

(2) Investment Niche

A. Advantages

The government has plans to bring together the R&D capabilities of the government, academic and research institutes to establish biotech industry clusters, promoting the industry by focusing all the essential elements in one place. In the northern part of Taiwan, the Taipei area, specifically the NangGang Biotech Plaza, has 2 incubation centers: the Biotech Incubation Center, Small and Medium Enterprise Administration, MOEA and the Incubation Center, Genomic Research Center, Academia Sinica. More than 50 biotech companies are located here, thereby making it a biotech cluster. In addition, Hsinchu county is the home to Taiwan's first science-based industrial park, set up to help the development of high-tech industries. A new Biomedical Science Park is underway and will be managed by the Hsinchu Science Park Administration Office.

Taiwan has many strengths that give it an edge over its competitors in Asia. Some of Taiwan's advantages include: existing expertise in high technology; strategic location at the crossroads of three leading Asian economic regions – Northeast Asia, China, and Southeast Asia; strong legal framework; highly educated workforce, particularly in IT and biology; world-class research facilities; abundant capital and Asia's most vibrant

venture capital industry; and knowledge and experience in IT and mold industry.

The listed incentive industry among newly encouraged emerging strategic industries. The government has enthusiastically developed a conducive environment to continuously attract foreign investors. Taiwan has sufficient local capability for upstream medical devices' research and development. Compared with other Asia Pacific nations, Taiwan has high-standard capabilities in conducting Chinese and western clinical trials, and is suitable for developing contract research organization (CRO) services. Taiwan has ensured conformity with international standards by implementing cGMP regulations; domestic pharmaceutical companies are experienced in developing generic drugs. Ample biotechnology and pharmaceutical professionals are based both locally and internationally.

Taiwan has a conducive environment for the development of small and medium size enterprises. Also, the Taiwanese are recognized for their capitalist nature and entrepreneurial spirit. Advanced IT and mold technology supports the development of medical device.

B. Investment Opportunities

(a) Rising demand for better living standards in the Asia-Pacific; (b) Growing economy and market for potential development; (c) Increasing number of strategic alliances and technology transfer cases with multinational biotech and pharmaceutical companies; (d) R&D and precision processing sectors are ready to take advantage of the growing global trend towards outsourcing in the biotech industry; (e) Right timing for endless business opportunities in post human gene decoding; (f) High value-added, long life cycle and value chain of biotech; many points of entry available,

from R&D to marketing; (g) Flourishing biotech R&D service industries (technical evaluation, R&D design, intellectual property services, and start-up incubation services); (h) Many large-sized and high-quality medical centers provide optimal conditions for undertaking clinical trials; (i) Clear market segmentation from temperate zone products of advanced countries with Taiwan's sub-tropical climate develops Asian sub-tropical agricultural biotech; (j) With the world's rapidly aging population, the growth in demand for medical and health products is inevitable.