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# Will China Become a Global Power in Biotech?

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*Biotech Workshop —December 5, 2003  
Sponsored by Asian American Multitech Association  
and Sino-American Pharmaceutical Professionals  
Association – West Region Chapter*

There are a number of dimensions in becoming a global power. These include the extent to which R&D has been or can be commercialized on a global basis, being a primary offshore manufacturing site for products sold in the U.S. and other global markets, and being a source of capital market support for the industry. Competition from India is also a factor.

## **Can China become a global center for biotech R&D?**

The key word is global as opposed to research only for local purposes. Disease prevention, assisting the elderly, agricultural production improvements, and traditional Chinese medicine are driving research in China. Biochip development a, “lab on a chip,” for use in drug research and disease diagnosis has perhaps received the greatest global notice to date.

Intellectual property protection is critical to protecting innovation and competitive advantage. The patent strategy for filings within China for such R&D must be global. Patents filed initially in China sometimes encounter difficulties in international filings because of the limited disclosure in the applications. Enabling disclosures need to be broader for global protection than in applications filed in China. Otherwise, the consequence may be that invention priority dates will be delayed or protection lost altogether. In addition, patent enforcement in China will need to be strengthened if China wants respect for its intellectual property in other countries and to encourage innovation within China itself.

## **Can R&D from China be commercialized in a business model with a meaningful exit strategy?**

R&D needs commercialization with meaningful exit strategies in order to attract private investment. Initial

commercial validation of China R&D sometimes is helped by collaboration between the China research entity and U.S. researchers. One business model that has been used to create multiple exit opportunities is a spin off of the technology to a Hong Kong or U.S. company (or a Caymans Islands company, so an IPO is possible in either Hong Kong or the U.S.). In these models, the Hong Kong or U.S. “front end” is the commercialization component and the China “back end” is the primary research component.

The currently strong IPO and venture capital markets for life science companies in the U.S. are clearly a factor in structuring a business model. Acquisition by major U.S. pharmas is also currently more feasible because of their higher stock prices. Use of the U.S. “front end” model described above will facilitate an acquisition. 2003 may be year of biotech IPOs in the U.S. Of the 50 IPO filings in the third quarter 2003, 14 were in the life sciences sector. Valuations are increasing and this trend will likely continue through the first quarter 2004.

Market economics is an important commercialization consideration. In the area of over-the-counter and prescription type drugs, China is a huge market with high volume potential sales. China, however, has controlled prices for many drug products and has weak patent protection and enforcement for such products. The Chinese government acts both as the primary customer and the authority that sets prices. Prices are also subject to change by the government which impacts revenue visibility. While the potential market is very large, the economic issue for a business is whether this market by itself can support private investment with a meaningful exit strategy.

The U.S. has market driven prices and strong patent protection. There is some governmental subsidization of prices rather than price controls. To attract investment, the market for the business’s products may have to be in the U.S. as well in China in order to achieve an investable value.

Some of the market economics issues are:

- Is novel and innovative research possible in China if the market focus is only local?
- Can global investors be attracted if the market focus of the company is only local?
- Could China move to a subsidization approach rather than a price control approach which would change the economics of the China market?

**Is first mover advantage important?**

China's opportunity to become a global power in biotech may depend on how quickly it can move. India is not standing by idly in the biotech space. India also desires to become a global power in biotech and first mover advantage may be important. India has strong biotech research capabilities but is not perceived to be as significant of a market opportunity as China. The continuation of China's natural manufacturing advantage will depend on the ability to obtain FDA approval for its manufacturing facilities. India currently has several FDA approved manufacturing facilities. Another point of competition is whether ethical and quality issues can be addressed in either China or India such that data collected in clinical trials can be used in FDA submissions. This could materially reduce drug discovery costs. Thus, moving from study and planning to action will be a key factor in how this competition plays out.