Edison Liu

The executive director of the Genome Institute of Singapore surveys the changing global landscape of healthcare provisioning.

Edison Liu has spent his career charting the course of translational biomedical research programs, previously at the US National Cancer Institute and for the past decade at the Genome Institute of Singapore. In this edited interview, he shares his views on the rise of the healthcare market in Asia.

How are the drug and diagnostic markets in Asia likely to change?

Edison Liu: I think the most fundamental change will be in the combined effects of the dominant size of the Indian and Chinese markets and importance of their views on health financing. Both are actually developing nations with a sizeable underclass where access to even antibiotics may be problematic to some in rural regions. The public sector will not pay the prices that Western countries are willing to give for even the common drugs, perhaps unless the pharmaceutical producer is owned by a Chinese or Indian national concern. When this happens, then it will be to their benefit to maintain higher profit margins for what would then be considered indigenous companies. Even then, the pricing will be lower than in the west.

In terms of products, there will be more sold at either smaller unit costs, or sold cheaply as stripped-down versions of the western counterparts. This is already happening with medical devices. The downstream effect is that Western countries will want these devices if they see that the same function can be accomplished at considerably lower cost. This will mean lower margins for health device companies as well.

Which areas of biomedicine should Asian governments prioritize?

EL: I think new medical devices will be generated from Asian R&D primarily because of the number of engineers being trained and the history of Asian nations to be major producers of engineered devices. I believe that medical IT will be a key sector in the new biomedical economy and that Asian companies will probably gain significant market share quickly. They have the infrastructure and the know-how already. What they lack is domain knowledge in biology and medicine in these IT sectors, but that deficit is being remedied.

In terms of translational medicine, Asian institutions have been, until recently, poorly funded to do investigator-initiated clinical trials. This will change dramatically in China, where plans are afoot to develop large clinical translational networks. But they may also have an advantage primarily for two reasons:

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first, because of demographics and second, because of culture. The demographic reason is that the numbers of treatment-naive patients for any disease are huge, and a clinical trial can complete its accrual quickly and cheaply. The cultural reason is that in traditional Asian societies, the physician holds an exalted position and is highly respected. For this reason, the acceptance rate for clinical trials is high. These are compelling reasons for clinical trials to be performed in Asia. Proof-of-concept [POC] studies require more sophistication, which may not be found currently in China or India, but this situation is quickly changing in that POC units are being formed in China with Western expertise and returning Chinese expatriates.

How will the changing global landscape affect biotech and pharma companies?

EL: Two opposing forces are at work. Price sensitivity explains to a large extent the development of the generic industry in both India and China. Opposing this, however, a middle class is emerging who is willing to pay premium dollars—in cash—for certain high-end drugs. In the long run, these two forces may induce biotech and pharma companies not only to modulate their prices for products purchased by the public sector (like HIV antivirals) but also to provide the higher end products to niche submarkets for the private sector as cash transactions. In either case, there will be significant political pressure from governments for the products sold in China and India to be produced there.

What this will mean is that pharmaceutical giants will progressively acquire a greater Asian flair just as much as the original European pharmas became more 'American' as the market power shifted to the United States. Expect to see Asians being CEOs of multinational pharmaceutical companies or for an Indian company take over one of the stalwart large drug companies.

How can western companies compete in Asian markets?

EL: Foreign companies can compete only if they join forces with local players who understand the market who will have a stake and will not tolerate being undercut. Pharmaceutical companies will need new business models—getting into generics (which they are) and into pharmaceutical logistics (which is still poorly developed in many emerging countries). Smaller biotech companies will have to go global early. The scientific plan and the founders may be from the West, but the production and product improvement might be distributed in different Asian countries for their specific competitive edge—India for IT, China for manufacturing, Singapore for the quality stamp and final assembly.

How should biotech companies think about targeting R&D efforts to capture the emerging Asian market?

EL: Current biotech leaders have little or no experience with the Asian market, which is heavily driven by pricing. I think that products related to Internet access to drugs, delivery of quality care, solutions for an aging population will be where Western service know-how is important and is an advantage. This is not dissimilar to other products: the West cannot compete with China on the production of mass consumer goods, but there is a high demand for luxury-brand items (fsuch as Gucci bags and Porsche cars) in Asia, especially China. So biotech will need to be more innovative; for example, drugs that require specialized tests to maximize their effectiveness or monitor drug response in a complete therapeutic package not found in China or India. We will need to redefine what biotech is.