

Sharing secrets

The launch of *Nature Biotechnology's* Trade Secrets blog reflects the growing importance of biotech in emerging markets.

Last month, *Nature Biotechnology* launched a new blog, Trade Secrets (http://blogs.nature.com/trade_secrets/), to canvas opinions and insights from contributors involved in the life science commercial sector around the world. This represents one facet of an ongoing editorial effort to enhance our coverage of developments in biotech outside of traditional Western markets. Life science commercialization is becoming an increasingly global enterprise and it is clear that emerging markets are going to figure much more prominently in the industry's future than they have done in the past.

According to Ernst & Young, currently ~90% of the biotech sector's companies and ~95% of its revenues originate from companies based in the United States or Europe. These regions dominate the biotech scene. They are where life science ventures first originated, where the largest and most successful markets are found and where the industry wields most of its influence.

But looking at the biotech sector in terms of dollars and cents is just one way to measure success. Like the Mercator projection of the globe, which magnifies the area of the rich Northern countries and diminishes equatorial South America, Africa and Asia, the financial lens through which we view biotech alters our image of it. Assessing the impact of biotech through its influence on quality-adjusted life years (QALYs) or on yields of particular crops are equally valid measures of success. In this context, the output of biotech vaccines, diagnostics, biologics, pest-resistant crops or biofuels in emerging markets is likely to be just as impressive as that in many Western countries.

At least for the foreseeable future, with economic recovery proceeding more slowly than expected, healthcare reform currently under way in the United States, an increasingly risk-averse regulatory system, and downward pressures on reimbursement and product pricing, biotech companies are likely to have fewer growth opportunities in Western markets than in emerging ones. Indeed, for companies providing products aimed at orphan indications, the populations of some of the growing economies—180 million in Brazil, 141 million in Russia, 1.1 billion in India and 1.3 billion in China—represent substantial market opportunities.

But for pharma companies such markets are only 'emerging' in the sense that they are appearing, for almost the first time, as a significant contribution to the bottom line. Brazil, Russia, India, China, Korea, Singapore, Thailand, Egypt and Saudi Arabia have emerged as places where drug companies look to sell exactly the same kinds of product that they have been developing for the West for decades. It is the growth in personal wealth and, oftentimes, in the diseases that are associated with personal wealth, that is emerging. Westernization creates Western-style markets.

Thus, the diseases affecting populations in emerging economies are looking increasingly like those that afflict Westerners. With improved sanitary conditions and increased urbanization, the disease burden in many emerging countries is now shifting from infectious scourges to diseases of aging, such as cancer, or ailments associated with a sedentary lifestyle and

Western diet, such as diabetes and obesity. By 2020, 16% of the Chinese population (that is, 224 million, equal to roughly two-thirds of the US population) will be older than 65. And by 2025, half of the projected global number of 330 million diabetics will be Asians and Pacific Islanders.

That is not to say that entering these emerging markets is without challenges. For one thing, many of these countries have political and social systems unlike those in the West. In many instances, top-down governments are accustomed to negotiating very substantial discounts for medical products. Thus, it may be difficult for Western companies to negotiate substantial profit margins, even if substantial sales volumes are achieved. At the same time, in regions where bureaucracy, corruption and cronyism are rife, foreign enterprises will have to tread carefully in negotiating with local officials and managing business transactions (http://www.transparency.org/policy_research/surveys_indices/cpi/2010/results).

The flip side of all this is that emerging markets are also emerging providers of biotech products and of research services to biopharmaceutical companies and multinationals. For local entrepreneurs, the business and economic models in these countries are likely to be considerably different from those in the West.

In many countries, a lack of risk and venture capital, fickle prioritization of government funding, equivocal intellectual property protection, restricted pools of research expertise with relevant training as well as regulatory and government agencies ill equipped to deal with biotech products are the norm rather than the exception. Enterprises often have to succeed in an environment where accountability and transparency is less than clear—one need only look to the heparin and melamine contamination debacles in China to appreciate the potential problems this can create.

What is clear is that biotech is now a global endeavor rather than a Western one. Emerging economies are increasingly viewing domestic enterprise creation as a means for expanding exports, creating high-paying jobs, increasing prosperity and improving the mortality, morbidity and nutrition of their people. Many of the resulting businesses will not look like traditional US and European companies because so many aspects are different—the cultural values of the end consumer, the local infrastructure for delivering healthcare and food to that consumer, the strengths and entrepreneurial acumen of the local scientific base, the financing environment for companies, the local intellectual property regime, the regulatory framework and the reimbursement environment. These create not only challenges but also opportunities.

This journal intends to engage the expanding pool of entrepreneurs, inventors and financiers around the globe as they adapt life science innovations to address local needs and constraints. To this end, we have recruited over 20 contributors from India, China, Latin America, the Middle East, Asia, Europe, North America and beyond to provide their perspectives on the state of biotech in each of their countries. We invite our readers to participate in the dialog on the blog and look forward to continuing this conversation both online and in our pages.