Innovating in China’s pharma market: An interview with AstraZeneca’s head of R&D in Asia and emerging markets

The country may well foster new models of innovation, but success will require a long-term commitment and talent development.

Jeremy Teo
The health challenges of China and Asia offer big opportunities for multinational pharma companies. Cases of chronic diseases, such as diabetes, are on the rise in the region, as are lung, gastric, and liver cancers. China alone is likely to be the world’s third-largest pharmaceutical market by this year, with sales of more than $50 billion.

AstraZeneca, the largest multinational pharmaceutical company in China’s prescription market, has positioned itself to take advantage of this growth—it has more than 4,700 employees in the country, in manufacturing, sales, clinical research, and new-product development. In particular, AstraZeneca was an early mover there in research and development: in May 2006, it announced a $100 million R&D investment, which included the establishment of the AstraZeneca Innovation Center China, in Shanghai. The center’s initial research mandate was “In China, For China,” but it now has a broader mission as a full-fledged discovery center focusing on diseases more prevalent in Asia.

These heavy investments in China should give AstraZeneca’s innovation efforts a boost by providing closer access to China’s scientific talent pool and to potential external partners, says Steve Yang, the company’s vice president and head of R&D for Asia and emerging markets. Yang, who joined AstraZeneca in January 2011, recently discussed the challenges of pharmaceutical innovation in China in an interview with McKinsey’s Jeremy Teo at the Shanghai headquarters of AstraZeneca China.

The Quarterly: How is China’s environment for innovation in pharmaceuticals different from the environment in other markets?

Steve Yang: In many areas, doing pharmaceutical R&D in China is similar or identical to the West. We basically have the same quality and compliance standards throughout our R&D efforts. We are a regulated industry, and we try to follow local and global regulations.

Still, three factors differ from other markets and present a unique opportunity for China. First, the current macro environment of China is very favorable, in terms of the growth of the pharmaceutical market, the investment of the government in infrastructure and basic research, and the availability of talent.

The second advantage is timing. Our industry globally is facing a tough R&D productivity challenge. That means we have to do things differently out of necessity—and that particular mandate is very, very strong across all the companies. We’re not going to replicate what has been done in the West. We will try to innovate and transform how we do R&D.

The third advantage is, to some extent, a double-edged sword. There has been limited innovative pharmaceutical R&D work done in China, so we are starting with a clean slate, both in terms of the experience of local talent and the environment. But that could be an
opportunity. It could remove many of the existing constraints of organizations, allowing us to experiment more and to try different things with the hope that, ultimately, new R&D models will emerge. These could prove to be innovation driven, but different from and more effective and efficient than the model that’s been used in the past.

**The Quarterly:** *In this environment, how do you approach innovation in China?*

**Steve Yang:** I can offer three specific facets. The first one, which is fundamental, is that we can leverage what our industry has learned painfully over the last few decades. There is high attrition at each step of the R&D process, and we learn from all the companies and all the products across these areas about what didn’t work. For example, we have learned that patient selection is critical to reducing the attrition rate. Selecting the right biomarkers and patients is pivotal to the success of a drug. This is a new insight, but one that is widely available to whoever wants to start a new drug discovery operation.

The second is that there are many unique disease mechanisms in China. Gastric and liver cancers, for example, have high prevalence and, in many cases, could have different populations or different disease etiologies. That presents a white space on which R&D innovation can focus. We can use what we have learned in the West to understand this situation and try to develop new medicines against those diseases. I hope that will open up new markets and help us meet unmet medical needs of patients in China and the rest of Asia.

The third, which is also very important, is that China and, to some extent, India have shown the world the importance of conducting R&D with more resource efficiency, particularly by focusing on externalization. This could mean strategic outsourcing of certain R&D functions. It could also mean collaborating with academics or biotech companies, and that’s an area in which I believe China can offer tremendous potential not only for our local R&D operation but also for our global R&D.

**The Quarterly:** *There are some skeptics who say that pharmaceutical innovation in China is a long shot, and any efforts will take many years to materialize. How do you respond to that?*

**Steve Yang:** We are a regulated industry, so our product-development time line is very long. Look at the traditional hot spots of pharmaceutical innovation in Europe and the United States and at some of the R&D sites in the West. How long does it take for a site, from its establishment, to become productive, to discover and develop new drugs? We are looking at decades. On the other hand, that’s the type of long-term commitment a company and a nation need to reap long-term benefits, economically, through knowledge development and innovation that will eventually benefit patients.
The Quarterly: How far has AstraZeneca gone in achieving its aspirations for innovation in China?

Steve Yang: We have made great progress and built a solid foundation. But if you use as a measure the time needed to develop a new drug, we still have a long way to go. It takes 10 to 15 years to take an idea all the way from a scientist’s hypothesis to products on the market.

Our Innovation Center China was announced in 2006 as a part of a $100 million investment we made in China, and it was launched in October 2007. During the four years since then, we have accumulated a lot of data, contributed to global oncology research in the area of biomarkers and translational science, and built credibility and a strong team locally. We are ready to expand our mission to become a drug discovery center, with a special focus on cancers prevalent in Asia, such as gastric and liver cancers. But the journey has just started.

The Quarterly: What are the bottlenecks to successful R&D in China?

Steve Yang: There is a Chinese saying that you may have a destiny, and that final destiny may be very bright, but the road that leads there is inevitably windy and full of challenges. That’s the case at both the strategic and operational levels. The intellectual property-protection environment has been improving, but there is always room for further
improvement. Also, the industry needs to work with government stakeholders to improve and bring more clarity to regulatory policies on drug development.

On a day-to-day basis, managing turnover and retaining and developing talent can be challenging, although in AstraZeneca R&D we are fortunate to have a turnover rate well below the industry average. Above and beyond these, AstraZeneca is a multinational company, and the majority of our senior leaders, our resources, and our stakeholders are thousands of miles and many time zones away. Constantly gathering their support and commitment is very important. From my experience at AstraZeneca, we have received top-level support and have good stories to tell. But we can never really rest on our laurels.

**The Quarterly:** How do you rate the quality of R&D talent in China’s pharma industry?

**Steve Yang:** There are a large number of scientists available, trained either overseas or locally. We have seen significant quality of talent both in the returnee population and in the locally educated population. There are disciplines—for example, chemistry and general biology—that tend to follow this trend. There are also disciplines that are highly specialized and require decades of training. In those areas, the talent, particularly those with experience, is in short supply. Examples would be toxicologists, pathologists, statisticians, and clinicians. That’s one dimension to look at: the technical competency of the talent.

The other dimension, given the fast growth of the markets, includes the leadership and management capabilities of the talent. In many cases, companies like ours need to ramp up our efforts quickly, so we are giving the scientists—particularly the scientific leaders—the mandate not only to do good science and to drive projects but also to become good leaders and good managers. If we use those criteria, the number of individuals who possess all these skills is smaller.

But in general, we are optimistic. From our own experience, we can recruit talent overseas and locally. And to support our portfolio, our mission, and, more important, the Innovation Center China, we have an excellent record in retaining and continuously developing those colleagues.

**The Quarterly:** Would you elaborate on your views about intellectual-property protection in China?

**Steve Yang:** We have seen a significant improvement in the IP environment. But, because of the rapid development of the legislative environment and the regulatory framework, there is a constant flow of amendments to policies on the IP law. In many
In IP law, there has been a recent commitment reflecting the government’s increasing understanding of the importance of IP, but we hope to have more clarity around how those new laws will be interpreted and enforced.

**The Quarterly:** *What will innovation in China look like in the future?*

**Steve Yang:** One aspect is the view of the Chinese government. They have identified seven pillar industries that have strategic importance and should be innovative, including life sciences, medical, and biomedical. It is from those areas that the seeds of innovation will likely come in the future.

Another aspect is China’s urbanization. There are consequences to the migration to megacities with populations of more than 20 million. In these environments, people will increasingly have a more sedentary lifestyle. In such an environment, with high-density living, how do we continue to help people live a healthy lifestyle, prevent disease, and improve the quality of living? And the challenges and opportunities go beyond just inventing the next pill or vial for injection, to fundamentally thinking about what, with so many people living together, is the best way to prevent disease or at least slow down disease and some of the chronic-disease progressions? That is something I don't think the world has really tackled before. The scale of such innovation is where China can offer ground for experimentation and, ultimately, a marketplace where the impact can be shown.

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