

The Physician-Mandarin

By Dr Toh Han Chong, Editor, and Dr Jeremy Lim, Editorial Board Member

Taking the path less travelled seems to come naturally for Dr Beh Swan Gin. "Breaking off from the pack" very early on by joining the Economic Development Board (EDB) soon after graduating from the National University of Singapore (NUS) in 1992, he has since put his medical training to good use in a number of postings in the Government, including positions such as Managing Director of EDB and Executive Director of the Biomedical Research Council and leadership roles in the development of Singapore's biomedical sciences industry. SMA News caught up with Dr Beh, currently Permanent Secretary at the Ministry of Law, recently and heard from the man himself about the growth of the biomedical sciences sector in Singapore, his hopes for the country, and why he thinks Singapore is in its "golden period", and is "attractive" and "almost sexy".



The local biomedical story

Dr Jeremy Lim – JL: In a sense, you have been an active player in the entire local biomedical story. Can you share a little about the genesis of the entire initiative and what were some of the critical milestones over the years?

Dr Beh Swan Gin – BSG: I wouldn't call myself a critical player. I was a "fly on the wall", and quite lucky to have observed, participated and supported the effort.

We had been promoting pharmaceutical manufacturing since the early 1980s or so, and our big break really happened when GlaxoSmithKline (GSK) became very successful manufacturing in Singapore. Around the same time, in the mid-80s, the government felt that we needed to invest in gaining some understanding of biotechnology. GSK gave us a huge boost to our fledging efforts at that point of time, by giving a big research grant to the Institute of Molecular and Cell Biology to set up a neuroscience programme.

In the 1990s, the American firms also started to invest in Singapore, with Schering-Plough and Merck, subsequently, Wyeth, Pfizer and so on. So that really helped us build a substantial and resilient manufacturing base. Likewise, we started to attract medical technology companies and they too established sizeable manufacturing operations here. In medical technology, the firms started to go into

"They first must know what they are about. If they honestly have a calling to be a doctor, by all means, go for it. If they are persons with empathy, Medicine is truly a very noble profession. You make an enormous amount of difference in the people around you, not just the patients but their families. But first, doctors must know themselves. If medical students and young doctors want to experiment and explore other opportunities, they have to start acquiring different perspectives. Join the student council or something that gives you a wide range of experiences and forces you to acquire new skills you would otherwise not focus on. To me, it's about investing in options and in this case, the investment is your time and effort."

– Dr Beh's advice for young doctors

product development, product engineering early on. But as we know, in the pharmaceutical industry, research and development (R&D) requires significant basic science capabilities and Singapore, as a whole, was only starting to look into developing a knowledge-based economy, an innovation-based economy in the late 1990s. The biomedical sciences (BMS) industry represented the quintessential knowledge industry. With the support of then Deputy Prime Minister Dr Tony Tan, then Trade and Industry Minister George Yeo and of course, under the leadership of Mr Philip Yeo, Singapore made the big push into the BMS initiative in the early 2000s. The whole intent was to anchor and root the pharmaceutical and medical technology sector as one of our key economic pillars. We wanted to move beyond manufacturing, move beyond being a regional headquarters location, and strengthen our R&D capabilities. To do that, we needed to invest in establishing our own scientific base. And that was the whole genesis of why the Government put in so much effort to build up R&D in Singapore and in BMS.

JL: Were there many sceptics you had to win over? And what were some of the accusations as to why we shouldn't be doing this?

BSG: To the external world, people kind of looked incredulously at what we were doing. Then, they started to take us seriously because they realised we were putting enormous amounts of resources into it, not just the R&D funding but our commitment to build the infrastructure, best exemplified by Biopolis. We also showed our commitment to invest in the training of our Singaporeans so that some of our best and brightest who had the aspiration to pursue R&D as a career, could now do so. The international community really took note when we successfully landed some of the "whales", the term Mr Yeo often used to refer to the star scientists we attracted to Singapore. He did so in close partnership with Dr Sydney Brenner, and with strong support from Prof Tan Chorh Chuan and Prof John Wong. It was a very powerful story that we could tell the world.

Starting with the international scientists, and then subsequently the companies – the biotech industry, and the pharmaceutical industry – they began to regard Singapore as a serious player.

Later on, the detractors were primarily people from the medical community in Singapore because it was felt that resources were being diverted to the basic sciences, and not enough to the clinical sciences.

Truth be told, the concern was that if we started to also provide resources for doctors to pursue medical research, it would aggravate the situation on the healthcare delivery front. So we were trying to develop clinical research in a more calibrated manner.

I think we should recognise that it is just very lucrative to pursue clinical practice in Singapore. For the government to put serious money behind the doctors' research meant that we had to be sure that they too would put in the commitment. That was possibly something that while people said they would do, you could also see that they were spending an inordinate amount of time in practice. Consequently, we proceeded in a calibrated manner, gingerly, step by step. Today, I don't think the medical community can still say there isn't sufficient research funding for the clinicians.

Dr Toh Han Chong – THC: Looking at the achievements, what would you say was perhaps the crowning achievement of this 20-year biomedical enterprise, whether it is job creation, investments from Big Pharma or Big Biotech? What would be the great achievements? And what are the gaps that you feel could have been better addressed?

BSG: The rise of China and India was always going to result in the two countries attracting a disproportionate share of the investments that international companies were going to put in Asia. Indeed, many pharmaceutical companies have set up large R&D centres in China, less so in India, although they have outsourced a lot to Indian companies. They have put in large sales networks to employ a lot of people to try and get their share of the market opportunities in China. One could argue that if Singapore did not do what we did in the early 2000s, we would not be a player at all in Asia today.

At least, we can say that we remain the headquarters' location of choice for pharmaceutical companies. Certainly, those which have dual headquarters in Asia would put one in China and one in Singapore. Many others continue to have their Chinese operations report to Singapore. This is coming at a time when a regional headquarters (RHQ) is no longer just a "sales and marketing" operation, but one with senior decision makers who directly report to the chief executive officer. It is a vast difference from

“In medical school, I enjoyed the studying part tremendously but I guess it dawned on me that the life of a doctor would be very different. It requires much commitment and for that, I have great admiration of those who have strived in Medicine, pursued their specialist training and subsequently, practised with dedication. During my first three years in EDB, I continued to do locum work on Sundays because my dad wanted to make sure that I had something to fall back on, in case I couldn't make it as an EDB officer.”

– Dr Beh on why he did not pursue a medical career

“You know, you just go where you’re told to go. (laughs) Incidentally, when I was first accepted into NUS, it was to law school. I was in the reserve list for Medicine. A few days before term started, I received a letter that said I was accepted into Medicine, and so that was that.”

– Dr Beh on the “karmic coincidence” of being posted to the Ministry of Law

the 1980s and 1990s, when RHQs were really just sales outfits with some regional coordination responsibilities.

Again, using GSK as a very good example of what pharmaceutical companies are doing over here in Singapore – its RHQ orchestrates their activities in Asia and all emerging markets.

It has also allowed us to anchor and root the manufacturing piece. If we did not do what we did, if we didn’t gain the confidence of the industry that Singapore was serious about this industry, it would have been so easy to move and relocate manufacturing to China, just like what happened to other industries. But instead, not only do we have strong chemical API (active pharmaceutical ingredients) production, we have also built a strong biologics manufacturing base with companies such as Roche-Genentech, Lonza, GSK vaccines and more recently, Novartis.

Are we ever going to be able to create a thriving drug discovery industry like what they have in San Diego, Boston or Silicon Valley? In San Diego, it all came about from one company, Hybritech. Likewise, in the Bay Area, many companies spun out from Genentech. I’m hopeful that we will have our own success story and eventually, with scientists and investors who get rich from this success, they will start investing and forming new companies to create a cluster. What is quite comforting and encouraging is the fact that we have seen serial entrepreneurs in the biomedical space, who have decided to come to Singapore to start their companies, and these are not people who need the funding – they have track records and the ability to secure investors.

THC: Our cost base would be higher than India and China though.

BSG: It is, but this is not a game that is driven by cost. It is a game driven by discovery and expertise. Having said that, it is also somewhat dependent on serendipity, which means no matter how much money we put behind it, there’s no certainty that we will be able to get a drug that is discovered and developed in Singapore.

JL: One most vocal critic has been Dr Lee Wei Ling and

she has had issues with the linkage between anchoring pharmaceutical companies here through the research efforts and even the areas of focus. There is the argument of Asian diseases versus the global money-spinners. Did it catch you guys at EDB by surprise when she came out publicly and can you describe the sentiments back then?

BSG: I think we have to respect everyone for their views. I must say that she certainly expressed the views of, not all, but certainly a significant number of people in the clinical community. You know, this is a small country, you can’t back every single field of research, so you have to choose. Is it right to choose the areas where a lot of research money is being spent globally? I would say that if you did not do that and you started to invest in more esoteric diseases, we would also have been criticised, so I don’t think there’s a right answer. The fact that you have to choose means that some would not get the type of support they wish and it would turn them into critics.

I think the most valid point that she did make, that we were all very conscious of and as I said earlier, was a matter of timing, was that funding for clinical research must grow. And this has happened. Having Dr Ed Holmes on board to help us with the whole process was key because he provided the necessary leadership and guidance on how to approach the matter.

JL: Looking back at the BMS initiative, what do you think are some of the notable failures that we have learnt from? What are some of the lessons we have learnt? I mean, Hopkins was something that was quite public.

BSG: Hopkins was certainly a personal lesson. We worked on the assumption that big-name universities run like large multinational corporations (MNCs). You assume that when the leadership of a university is very committed to doing something, things will work out. I mean, Bill Brody, then President of Johns Hopkins is on the record for saying, “If you want to be a world class university, you have to be a global university.” He was very determined to take Hopkins global. It was on that vision that we decided to partner Hopkins. Yet, when it comes to execution, universities are run by faculty members and faculty members can have very different views and agendas.

We engaged Hopkins when I was in Washington DC in late 1995. During those years, it was very early in the game of universities going global. But now, universities have had the benefit of ten to 15 years of doing that. For instance, I think Duke learnt a lot from Hopkins. I think what they are doing in Singapore is a very progressive. Can it be better? Of course, we can always do things better. Yale, in forming its partnership with NUS, is also learning from the mistakes made by other universities. But

my personal takeaway was that big-name universities just don't run like big-name MNCs. They just don't.

JL: There was a period of courtship between EDB and some of the large American healthcare groups. At that point in time, what was the thinking around medical travel and Singapore as the so-called regional medical hub? And in the years that you have been involved, how has the thinking evolved, with regards to then Health Minister Khaw Boon Wan's reference of the "lost decade"?

BSG: Learning from our experience with the foreign universities, we wanted to be very careful in engaging the foreign hospitals and healthcare players. We were not prepared to put in the necessary resources to develop a partnership with them without making sure that they were going to put their skin in the game. And that meant we were not going to roll out the red carpet, unless we were convinced that they would be able to live up to their share of the bargain.

Furthermore, in the 2000s, it coincided with the sheer shortage of medical and healthcare professionals, which meant that increasing the supply of hospital beds would clearly cost more pain to the sector than generate good. The economic outcome would have paled in comparison to the negative impact on domestic healthcare, so ultimately, the decision was to go slow and do what we could on an opportunistic basis.

One could say that during the "lost decade", if we had organised ourselves better and expanded our capacity alongside the growth in demand, we could probably have created some Singaporean healthcare MNCs. But we didn't, so we just have to move forward. Having said that, a lot of private sector doctors did very well on the back of medical tourism. They're still doing very well. Those who joined

Mount Elizabeth in the 1980s when it first opened, are the guys who own multiple bungalows today. If only that earlier generation created multinational healthcare institutions as well.

JL: Do you have a hypothesis as to why we didn't create these institutions? Some of our most talented and brightest enter Medicine but our private sector has been a hodgepodge of single practices.

BSG: It is a function of how we are trained as doctors, which is to become an independent consultant, who can operate and function as the decision maker. Today, there is naturally a greater emphasis on teamwork but that wasn't the case in the past. But to be fair, if you look at the healthcare business, there aren't many MNCs in the first place. In the US, healthcare insurance is the primary payer, which means the US revenue model is business-to-business, allowing the growth of some large players. Healthcare in Asia is mainly business-to-consumer, which is more difficult to scale. However, we are starting to see some who are adapting to the marketplace and trying to create good healthcare corporations, though these are generally corporations that provide facilities and infrastructure, rather than ones with doctors as employees.

JL: Do you see hope for our homegrown Singapore healthcare MNCs, with an institutional set-up that you just discussed?

BSG: You need to create an organisational culture where you can bring in doctors as employees, and that would take time. Raffles Medical has achieved a modicum of success in creating that kind of culture. When it comes to organisational culture, you have to tread carefully. Otherwise, you destroy



Dr Beh (third from right), Mr Philip Yeo (sixth from left) and colleagues with Genentech executives at the groundbreaking for their biologics manufacturing plant in June 2007

everything in an instant. And I think that's exactly what Dr Loo Choon Yong (Executive Chairman and co-founder of Raffles Medical Group Limited) has been doing, step-by-step expansion, instead of doubling in size every two years or something like that, because you can destroy the culture very easily.

On Singapore's future development

THC: Having looked after EDB for a period of time, where do you think Singapore can remain competitive in the next ten years? What are the strategic areas of technology, and how can we be relevant and innovative in this world?

BSG: Let me start off by saying that I totally agree with Mr Lee Kuan Yew's comment that Singapore is in its golden period.

Frankly, even as late as 2005, 2006, the mindset of everyone here in Singapore was about how to make sure we could remain relevant to international investors, to the international business community and the financial community. It almost took us by surprise that suddenly we became the darling of global businesses with international companies starting to think of Singapore as their second home, their home in Asia. At the same time, we started to get this huge interest from high net worth individuals and business owners from all over the world, wanting to have some sort of connection and link to Singapore.

So we have become attractive and almost sexy. And I say "almost sexy" only because I think one of the reasons why we are attractive is because we are predictable, and predictability and sexiness don't quite go together. But we are very attractive and we will remain attractive because of the rise of Asia. And we are attractive to two sets of very different communities. One is those from the US and Europe, for whom coming to Asia is a must, and going straight to China and India to get their share of the market and growth opportunities, is a must. But yet, they do not want to put their crown jewels in those markets, for various reasons. They are extremely comfortable in Singapore: the rule of law, the use of English, the living environment, all sorts of good reasons, so you get a huge wave of interest coming from the West, which means that we get to choose. We get to choose the best companies that are attracted here, those who are most able to make a huge economic impact and contribute to Singapore.

And then, you have the other set, which are the rising

"Help common people become extraordinary people and go beyond what we think is possible. Leadership is about making that happen."

– Dr Daniel Vasella, Chairman of Novartis
(a quote that inspires Dr Beh)

titans of Asia: China, India and Indonesia. We have always been attractive to those in Southeast Asia but India and China are relatively recent phenomena. The difference there is that those who are wealthy and powerful, from the emerging economies, tend to have done so in one generation, very very recent. We don't have the ability to study their track record, to kind of investigate and help inform our decisions on who to attract and who to avoid. We are limited in our ability to discern between the deserving and less deserving. Sometimes, people say, "Hey, why do you want to have such people here? They are flashy, they drive fast cars, and are not necessarily the sort that we would want in Singapore." To be candid about this, I don't like it. Singaporeans don't like it.

So what do you do? Again, the interest is enormous. These people want to be in Singapore for many reasons. For some of them, it is about expanding internationally. Singapore is a much better place for them to go global because if they can't even succeed by using Singapore as their base, how are they going to succeed going directly to London or New York? At least Singapore is culturally comfortable. And the language barrier, particularly for the Chinese, is a real one. So Singapore is very attractive from that perspective. Do we want to forgo this huge opportunity because of a few bad hats? I think we have to really be very careful about making that sweeping judgement.

Like it or not, it is Asia's century. The Fortune 500 list of tomorrow will see Asian companies having a bigger share. The movers and shakers of the world will increasingly have an Asian face. So we have to make sure that Singapore remains an integral part of their plans going forward. That's the reason why we also have to engage this second community. I think engaging the first community, the Western companies and investors, is something that Singapore has been very comfortable with. It's almost something that everyone accepts, if you can attract even more investors from the US and Europe, it's good for Singapore as it creates opportunities for Singaporeans. People are less sure that attracting Indian companies and Chinese companies would mean opportunities for Singaporeans.

Last words

THC: What do you do to relax? What are some of the stuff that you enjoy doing outside of your work?

BSG: I try to run twice a week. For me, it's something that I've been doing for the last 18 years or so. When I was turning 40, I was very inspired by the fact that Minister Ng Eng Hen ran a marathon. So I did and during that period, I trained a lot. Running is something that I enjoy doing because it keeps me physically fit. When you're running, you also get to think. Having time to think and reflect is



Dr Beh and family at Cape Cod, Massachusetts, USA, in June 2012

very useful. Not having to deal with issues that require an answer immediately, but just to have your mind wonder and explore other perspectives.

I enjoy travel because again, it adds a lot of new perspectives. Quite luckily, during my work in EDB, I was able to go to many unusual places. I was in then Minister George Yeo's delegation when he visited Iran. This was before Mahmoud Ahmadinejad became president. Mr Philip Yeo was there too, and we visited to find out more about their scientific and medical sectors. We went to Shiraz and Persepolis, the ancient city that unfortunately, Alexander the Great ransacked and burnt down. But just to see it was really wonderful.

I also visited Havana, Cuba, again with Mr Philip Yeo. Despite the poor state of Cuba's economy, it has always provided resources for biomedical and biotech research. For a third world country, they have very respectable biotech capabilities and a medical school which provides free medical education to students from Central America.

My last visit before I left EDB was to Cartagena, Colombia. The Colombian government invited me to join an advisory committee for one of their economic development initiatives. So through EDB, I managed to go to places one would otherwise not visit.

JL: How has fatherhood changed you?

BSG: It's a fabulous experience. I have two little girls, one four and the other, two. It has forced me to slow down my pace and embrace my responsibility to two young ones. In some sense, if you think about all the things we're doing in the public sector; what the political leaders are doing – it is about building a Singapore to be a good place for the next generation. By having two young kids, it just brings everything very close to home.

THC: Are there any books or interesting films that you have come across recently?

BSG: I'm terrible; I read primarily business-related books so it's very boring. I don't think the readers would find it very exciting. *(laughs)* I finally read *The Long Tail* by Chris Anderson. It's not a new book and Chris Anderson is the editor of *Wired*. It gives an insight on how and why the Internet is such a powerful platform; not just for starting businesses, but in creating global scale businesses. I've also read *Blink* by Malcolm Gladwell, which is a very interesting book about thin-slicing and how people make decisions.

More recently, I've been quite intrigued with decision biases and how people need to be aware of them. So I take active interest in reading about these things.

THC and JL: Thanks so much, Swan Gin. SMA