Michael Yang – Senior Vice-President (Innovation and Enterprise), City University of Hong Kong (CityU)

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23.06.2023

Tags: Hong Kong, CityU, Innovation, Investment, Biotech, Start-Ups

Professor Michael Yang of City University of Hong Kong (CityU) introduces the 'HK Tech 300' programme he oversees, the largest university-based entrepreneurship programme in Asia. Drawing on his own experience as co-founder of Prenetics and Cellomics, biotech companies based on technologies developed in his laboratory at CityU, Professor Yang assesses the translational science landscape in Hong Kong, why the city's biomedical start-ups must always have the Greater Bay Area (GBA) and mainland China in mind for their future development, and how competitive Hong Kong biotech can be on an Asian and global level.

Since we last spoke in 2018, the world has gone through quite a tumultuous period. What activities have been on the top of your agenda since then?

At that time, I was heading City University of Hong Kong (CityU)’s Department of Biomedical Science and was active in research and the translation of research into practical applications. Despite the global complications over the past five years, the department has continued to grow in this area and witnessed great success in the research and education. We also spun off a new academic unit, the Department of Neurosciences, which was the first of its kind in Hong Kong.

I was appointed Vice-President of Research and Technology in 2020, leading the research and knowledge transfer efforts of the university.

On the individual front, one of the companies I helped found over 10 years ago with one of our PhD students, Prenetics, was listed on the NASDAQ in 2022. Prenetics went through its ups and downs as a genetic testing company before riding the wave into the public space through its ability to provide COVID testing in Hong Kong and the UK as a government-designated laboratory. We now have a presence in Africa, Europe, the US, and Asia and are transforming into a genomic service and digital healthcare business.

In 2018, I co-founded another company with two of my PhD students, Cellomics, focusing on liquid biopsy products for cancer screening and monitoring. Cellomics currently has about 150 staff and two NMPA-approved products being used in over 40 hospitals in China

Can you expand on your work in translational research for the commercial space, particularly about the HK Tech 300 – what is this?

I am currently Senior Vice-President (Innovation and Enterprise) at CityU. I am responsible for HK Tech 300, the largest university-based entrepreneurship programme in Hong Kong, and maybe in Asia, too. CityU has allocated HKD 600 million to help students and young graduates take their research from the University and create start-ups. To begin with, we provide eight-week entrepreneurship training. Then we provide them with HKD 100,000 in seed funding to make a prototype and develop a business plan. Then they can submit a detailed business proposal that will be evaluated by multiple panels comprising CityU representatives and investment professionals and experts in the start-up ecosystem. For the start-up teams that are selected, we provide angel fund investment of up to HKD 1 million for each start-up.

The first step of any start-up is the most challenging, as students and young graduates do not have the financial means to go forward, so setting up this ecosystem for them is crucial. We connect them with mentors from international and regional companies, as well as industrialists and entrepreneurs, to help them learn how to successfully operate a business, all free of charge. The programme focuses on incubating start-ups with a technology background, including biomedical sciences. Some 1,300 students have completed the entrepreneurship training programme and we have incubated more than 560 start-ups so far.

On top of this, we have also established a strategic partnership with the Hong Kong Science Park that provides HKD 100,000 to our Seed Fund start-up teams, through its IDEATION program. Actually, we are the largest provider of start-up companies in Science Park’s various incubation programmes.

These initial funds are great for start-ups, and the support network is even more valuable in many ways. How do you facilitate these companies' growth further down the line?

Within our 560-strong company portfolio, we screen the more mature ones for angel investment; more than 120 have received this additional support of HKD one million so far. We have eight co-investors from venture capital funds and successful tech companies that pledge to match our investment with an additional HKD 40 million annually. These co-investors are from a range of areas, and in addition to funding, they will help incubate these start-ups with domain expertise and commercial experience.

Furthermore, we have established a partnership with China Resources Enterprise, part of the largest state-owned conglomerate in China. We established, in the initial phase, a HKD 100 million co-investment platform to invest in our start-ups, and more importantly, channel the products and services developed by these start-ups into the business network of China Resources Group. We are also working with authorities across the Greater Bay Area (GBA) to facilitate our tech start-ups to expand into the Mainland market.

How important is mainland China for the growth of these companies, especially considering the small market size of Hong Kong?

Hong Kong start-ups must think and look to the mainland China market; it is of paramount importance. Start-up companies can develop their products or services in Hong Kong, and Hong Kong is a good environment for that, but they must leverage the supply chain and manufacturing capability in GBA. And if they want their company to be a unicorn and grow to a considerable size, it is a logical step to move into the Mainland due to the sheer size of the market.

HK Tech 300 is a big first step for a Hong Kong university. How did you convince the University board to finance the programme?

In Hong Kong, many people talk about how great the local universities are, having five in the global top 100, but what does this actually mean? It means we are publishing a large number of academic papers which are recognized by academic peers internationally. But where does all this fantastic

research go? They are mostly sitting idle and forgotten when the students developing them graduated. This is what HK Tech 300 is doing – helping the students and graduates with a passion to take the first step of their entrepreneurship journey, to convert this excellent research into actual products and services, to make a difference in the world. The start-up experience these young people gain is invaluable, regardless whether they will continue on the journey or look for jobs in established organisations. The objectives of universities are to create new knowledges and develop new technologies, to cultivate talents and future leaders, and to help address the grand challenges the world is facing. HK Tech 300 serves to achieve the goals.

Since its launch, HK Tech 300 has received overwhelming support from the community and made a significant impact on the entrepreneurship ecosystem in Hong Kong and beyond. The key features of the program are:

1, Scale: it’s the largest university-based entrepreneurship programme in Hong Kong and perhaps in Asia;

2, Openness: the programme is not limited to CityU staff/students/alumni only, it is open to all who want to use CityU IPs to develop their start-up business;

3, Technology Oriented: it aims to translate the research results and IPs generated in the University for practical applications to address the social and economic challenges. Many of the start-ups under HK Tech 300 are backed by patents from CityU;

4, Ecosystem: the programme has established strategic partnerships with key government/industry organisations, and has received support from more than 80 professional and industrial partners, and more than 150 successful entrepreneurs and industry leaders and seasoned executives have volunteered to serve as mentors for the start-ups;

5, Co-Investment: in addition to the HKD 600m from CityU, the programme has 9 co-investors (the number is growing) that pledge to invest HKD 200m in 3 years to the start-ups;

6, Impact beyond Hong Kong: the programme has expanded to Mainland China in 7 cities last year (9 cities this year), and has launched the Southeast Asia (SEA) initiative with 6 leading universities and incubation partners from four countries in SEA.

Which areas does the programme focus on?

About 20 per cent are in healthcare and biotechnology and 20 per cent in financial technology. The other 60 per cent are in other areas such as AI, ICT, robotics, energy and new materials.

Drawing on the experience of the biotechnology companies in your programme, how do you see the biotech ecosystem in Hong Kong today?

It is a lot better than it was a few years ago. In Hong Kong we have good basic research and have several hundred professors, along with thousands of PhD students, working in this area across the six Hong Kong universities. This, coupled with our financial strength, should put us in a good position. Having said that, life science investments have a long lifecycle and must be incubated correctly before reaching commercialisation, and this is where we come in.

Furthermore, in recent years we have seen the introduction of Chapter 18A (pre-revenue company listing on the HKSE). This has opened the window for biotech companies to go public and raise funds. About 60 companies have been listed since this Chapter 18A was implemented, but unfortunately only one is from Hong Kong; all the rest are from mainland China. So we need to create more biotech ventures and incubate these companies until they reach the commercial stage.

When you look at this journey between a biotech start-up and a public company, the ability to attract funds is critical. Fundraising is a global competition. Investors are not looking at just their local markets. If there’s true innovation, a company will be able to attract funding in Hong Kong. In addition, the Hong Kong SAR government is also working very hard to attract MNCs to bring their R&D and manufacturing operations here, this would over time attract a larger talent pool that would have the knowledge to work in biotech and maybe establish and grow their own companies. We need to build an entire ecosystem, and this will take time. You must build everything from the bottom up with a strong foundation. The most important thing is to just do it.

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