

Danny Yeung - CEO and Co-Founder, Prenetics, Insighta



Current methods [of cancer testing] often detect cancer at later stages through protein markers. Our aim is to revolutionize this by introducing early cancer detection, starting with liver and lung cancer

25.08.2023

Tags: [Hong Kong](#), [China](#), [Diagnostics](#), [Insighta](#), [Oncology](#), [Prenetics](#)

Serial entrepreneur Danny Yeung highlights the work of his Hong Kong-based genomics-driven firm Prenetics in prevention, early detection and targeted therapy. Having recently announced a USD 200 million joint venture - Insighta - with renowned scientist Professor Dennis Lo on a new early cancer detection technology, Yeung lays out the new company's growth plan, including multicentre clinical trials across Asia. He also discusses funding, affordability, and how this new tech can be integrated into standards of care within healthcare systems.

Can you begin by briefly introducing Prenetics along with the scientific areas covered by the company and the solutions you provide?

Our company operates in three main segments: prevention, early detection, and targeted therapy. In the prevention category, we leverage whole exome sequencing for our consumer product called CircleDNA and provide personalized recommendations for individuals, customizing their healthcare based on their genetic information. For instance, individuals via a simple saliva swab can assess more than 500 DNA reports, including optimal diet, nutrition and their genetic predisposition to specific diseases and cancers, allowing us to offer tailored guidance to proactively manage those risks.

Moving on to the next area and certainly a massive opportunity in both impact and commercial, early cancer detection. Recently, we announced a USD 200m joint venture with Professor Dennis

Lo, one of the world's most influential scientists in liquid biopsy to create Insighta, specifically to focus on early cancer detection utilizing a new phenomenon technology called "FRAGMA". Presently, the challenge lies in the fact that current methods often detect cancer at later stages through protein markers. Our aim is to revolutionize this by introducing early cancer detection, starting with liver and lung cancer. Our goal is to bring this to market within the next 12 to 18 months. Looking ahead, by 2027, we aspire to introduce a MCED test, a multi-cancer early detection solution for over ten common cancers using a single blood draw. Notably, the technology we are developing is characterized by its affordability, which is a crucial factor in its widespread adoption.

The noteworthy aspect of our approach is that we are addressing the cost barrier associated with similar existing tests. Traditionally, these tests can be quite expensive, often priced at USD 950 per test. We understand that for broader population usage, this cost is prohibitive, especially for tests that may need to be performed regularly. Therefore, our objective is to launch our tests within the next 18 months, and our target is to make them available to patients for under USD 200. This pricing shift could have a significant impact on accessibility and usage. At this moment, we are actively finalizing our case-control study, and in early 2024, we will be embarking on a multi-country clinical study which will involve Asian, Middle Eastern and Caucasian populations. This will contribute to advancing our mission of enhancing early cancer detection and making it more accessible to a global population.

It is a significant transition to go from developing a seemingly feasible technology being used for health data and testing to running costly clinical trials in the area of oncology diagnosis. Do you feel the company is ready to perform these scientific tasks?

Absolutely, transitioning from technological development to conducting comprehensive clinical trials is indeed a significant step. However, we are extremely confident in the potential of Prenetics' diagnostic platform for several reasons. Firstly, this journey is a well-calculated move for us. We are fortunate to collaborate with one of the foremost experts in the field of liquid biopsy, Professor Dennis Lo, renowned for his groundbreaking work in non-invasive prenatal testing. This technology, introduced by him in 2011, has become the global standard in prenatal care, benefiting over 15 million pregnant women annually across more than 90 countries. We see parallels between this success and our venture into early cancer detection with the FRAGMA technology. Leveraging his extensive expertise and proven track record, we believe that FRAGMA has the potential to become the new standard of care for early cancer detection within the next five to ten years.

It is important to note that our collaborator also possesses a wealth of experience in the realm of early cancer detection. He was the co-founder of Cirina, which was subsequently acquired by Grail for USD 300m, before Illumina then acquired Grail for USD 8bn. Building upon this foundation, the new FRAGMA technology offers distinct advantages: it features a simplified workflow, enabling faster scalability, and it boasts a lower cost structure. Capitalizing on our team's profound experience in large-scale execution and market dynamics, we are confident in the synergy that will drive the successful adoption of this technology.

For impactful scientific breakthroughs, a multi-faceted approach is essential. Beyond the scientific innovation itself, factors such as market awareness, adoption strategies, and efficient execution play pivotal roles. This is where our strategic leadership at Prenetics comes into play. Our collective experience positions us well to ensure that the remarkable potential of the FRAGMA technology reaches its full fruition, ultimately making a significant and positive impact on early cancer detection and patient care.

You mentioned the first two clinical trials will be for two types of cancers - liver and lung cancer which have a huge prevalence across Asia. What will the strategy of those clinical trials be? Will the trials be multicentre across Asia or even global?

Liver and lung cancer are not only substantial health challenges across Asia, but globally as well. Our strategy for these clinical trials involves a multicentre and multi-country approach, spanning various regions in Asia, the Middle East and beyond. The interest generated by our technology is truly exciting, as the entry barrier for advanced cancer detection solutions remains very high.

Hong Kong boasts a robust scientific community, enriched by the talent pool within its universities. Moreover, the current environment, with increasing global connectivity, allows us to attract skilled individuals from around the world to contribute to our endeavours. This is especially pertinent now that international mobility is on the rise.

It is important to highlight that we have already validated the efficacy of our technology. Our technology has demonstrated impressive Area Under the Curve (AUC) scores of 0.98 to 1.0 for multiple cancers, indicating its clinical validity. However, the next step is to further establish this validation on a larger scale. We recently announced the commencement of these trials, and we are actively enlisting participants for this purpose. Our approach involves collaboration with Contract Research Organizations (CROs) for the management and execution of these multi-country clinical studies, ensuring robust and comprehensive data collection.

What makes you confident that Prenetics can deliver a product with greater cost-effectiveness and that is more affordable for patients than the current market leaders?

I am confident in our ability to deliver a superior product with a stronger value proposition compared to the current status quo driven by larger competitors. Leveraging insights from Professor Dennis Lo's work in non-invasive prenatal testing, we have seamlessly integrated this knowledge into FRAGMA.

The workflow for FRAGMA is simple random sequencing without bisulfite conversion. The wet-lab analysis of FRAGMA is the same as the one used for non-invasive prenatal testing for (NIPT). Millions of NIPTs are performed every year in many different countries.

As the test does not require bisulfite conversion, it has a shorter turn-around time, more stable performance, and significantly lower cost.

Hence the versatility of the FRAGMA test is much better than any bisulfite-based tests, which is what others are currently doing.

In addition to workflow optimization, a crucial factor that drives our confidence is affordability. We are committed to ensuring that our product remains accessible to a wide population. With a patient price of just USD 200, we are positioning our technology to be globally adopted and truly impactful, benefitting millions of individuals worldwide. This combination of streamlined workflow, expert insight, and cost-effectiveness makes our offering a compelling choice in the market.

How daunting a task is launching global commercial operations given the lack of regulatory alignment between countries, especially in Asia? An area like cancer testing is not embedded in regular healthcare pathways...

Our approach involves a combination of in-house efforts and strategic partnerships with governments, healthcare institutions, and hospitals. We recognize the need for strong alliances to ensure the success of our breakthrough technology. As our product gains readiness, we anticipate that governments and institutions will be eager to adopt it, contributing to its global expansion.

In the current landscape, the lack of viable alternatives presents a unique opportunity for our technology. For instance, consider lung cancer screening, which typically involves a low-dose CT scan. The screening rate globally remains very low at 1-3% due to the limited options available.

Our innovative approach aims to provide a compelling alternative that addresses this gap, potentially revolutionizing the field.

Given that we are headquartered in Hong Kong, our initial focus will naturally be on this market. Moreover, Mainland China and the Greater Bay Area (GBA), being in close proximity, holds immense potential for our technology. The prevalence of conditions like hepatitis B carriers, cirrhosis and non-alcoholic fatty liver disease makes it a prime candidate for our early cancer detection technology. With approximately 25-30 percent of the population falling into the at-risk category for liver cancer, we see a significant opportunity for early intervention and disease management.

Our strategy involves targeting specific risk populations initially. For instance, individuals who are hepatitis B carriers, have cirrhosis or non-alcoholic fatty liver disease are at a higher risk for liver cancer. By concentrating on this demographic, we can provide a valuable and targeted solution. Considering the median age of cancer diagnosis and the need for early detection, we envision our technology being particularly relevant for those aged 40 and above with these specific risk factors, such as a history of smoking or liver disease. This approach ensures that our efforts are concentrated where they can make the most impact and effectively address the urgent need for early cancer detection.

How will you try to make your technology part of the standard of care?

In regions where the private sector holds more influence, our strategy hinges on two critical factors. Firstly, raising awareness and demand among consumers and patients is paramount. Many individuals are not yet aware that such advanced testing options exist. Our focus will be on educating them about the benefits and potential life-saving impact of early cancer detection through our technology. When patients understand the value, they are more likely to actively seek out this testing as part of their healthcare routine.

Secondly, we recognize the importance of engaging with healthcare institutions and professionals. Collaboration with healthcare providers is essential to ensuring that our technology becomes an integral part of the standard of care. By demonstrating the effectiveness, accuracy, and cost-efficiency of our early cancer detection platform, we aim to garner support from medical professionals and institutions. This involves building strong partnerships and providing the necessary training and resources to integrate our technology seamlessly into their practice.

Drawing from a parallel example in the US, the introduction of Cologuard cancer screening underscores the potential impact of patient and provider education. As awareness grows and the benefits of a novel testing approach become evident, both consumers and healthcare providers are more likely to adopt the new standard of care.

While it may take time to establish a new standard of care, we are confident in the transformative potential of our technology. By strategically addressing consumer education and engagement with healthcare institutions, we believe that our early cancer detection platform can indeed become the standard of care across the private sector in Asia within the next five to ten years.

Speaking about funding, rather than debuting on the Hong Kong Stock Exchange, Prenetics chose to IPO on the NASDAQ instead. What was the rationale behind this decision and where does Prenetics stand today?

This is a very valid question. When we were making the decision to IPO on the NASDAQ instead of the Hong Kong Stock Exchange in 2021, we carefully evaluated the market conditions and our long-term strategic goals. At that time, the US market appeared to offer favourable conditions for our IPO, and it provided access to a broader investor base with an appetite for innovative healthcare and biotech companies.

Additionally, we recognized the importance of international exposure, especially given our business focus on genomics and health testing solutions that have the potential to impact global health. By listing on the NASDAQ, we aimed to enhance our visibility on the international stage and attract investors who might have a keen interest in our unique approach to personalized healthcare.

However, it is important to acknowledge that there are challenges associated with being listed on a foreign exchange, such as the potential for limited understanding of our business model in certain investor circles. This is something we are mindful of and plan to address by continuing to share transparent and comprehensive information about our business operations and value proposition.

In terms of funding, we are pleased to share that we have secured sufficient funding to support our operations for the next three years and beyond. This funding will play a crucial role in advancing our clinical trials, achieving commercialization, and further developing our groundbreaking technology. While the fundraising landscape can be challenging, we are confident that our current financial position positions us well for our upcoming milestones.

Through COVID, Prenetics has unrolled massive testing in Hong and in the UK, gaining a strong reputation for seamless execution. How have you managed to make the business so operationally strong?

Execution is at the heart of our success, and there are several key elements that contribute to a strong execution strategy within diagnostics. First and foremost, assembling a passionate and aligned team is essential. Having a leadership team that shares our vision and mission is critical because a collective effort drives success. Collaboration and shared dedication within the team are essential ingredients for effective execution.

A robust execution strategy involves a thorough understanding of the target markets and stakeholders. We meticulously identify the initial markets where we want to introduce our products. Mapping out the healthcare ecosystem, establishing partnerships, and forming alliances are pivotal steps. This strategic approach allows us to connect with the right partners who can help us promote and distribute our products effectively. It is not just about having a great product; it is about building a network that supports education and awareness, both among consumers and healthcare practitioners.

An important lesson I have learned from my previous experiences, such as previously founding an E-commerce company which was acquired by Groupon, is that creating demand is a significant part of successful execution.

Our focus on prevention is a cornerstone of our execution strategy. For instance, our Circle DNA product, which offers genetic testing, has already garnered interest from 300,000 individuals. Prevention is a powerful approach to drive demand and cultivate a proactive mindset toward health. By starting with prevention, we lay the foundation for a comprehensive approach that encompasses both early detection and personalized healthcare recommendations.

Genetic testing is an ecosystem that is just at the beginning of growing to its full potential with implications in components such as research, therapy development, etc. Who will be the custodian of this critical data of the patients tested by Prenetics?

When it comes to the critical data of patients who undergo genetic testing with Prenetics, we take our custodianship responsibility very seriously. Patient data is treated with the utmost confidentiality and care. We adhere to strict data protection protocols and industry standards to ensure that sensitive genetic information remains secure. We obtain explicit consent from

individuals before conducting any genetic testing. This consent process ensures that individuals are fully informed about how their data will be used and gives them the authority to make informed decisions about sharing their genetic information. We are committed to transparency and providing clear information to individuals about how their data will be managed and utilized.

Is there a final message you would like to convey on behalf of Prenetics?

Certainly, I would like to emphasize that Prenetics is deeply rooted in advanced technology and scientific rigour. Our commitment to science and innovation drives every aspect of our work, particularly in the field of early cancer screening. The potential impact we can have is substantial, and our goal is not merely to become one of the world's largest diagnostic life science companies, but rather to make a meaningful difference by saving lives.

Partnering with Professor Dennis Lo, a renowned pioneer in the field, underscores our shared vision and mission. We are dedicated to pushing the boundaries of what is possible in healthcare, especially in early cancer detection. As we move forward, our focus remains on leveraging science and technology to create solutions that empower individuals to take control of their health and well-being.

[See more interviews](#)