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**“I Expect a Bifurcation of Tech-Ecosystems – One in China and One in the West”**



Smart data will help us to live longer, healthier and better lives, argued Dr. **Sherry XIAN**, Chief Data Officer of Chinese artificial intelligence (AI) unicorn iCarbonX, at the [stars Switzerland symposium 2019](#). While the benefits of applying AI in healthcare seem obvious, the road to commercialization is less clear. China is a huge market, but obtaining the right amount of data is costly, and the customer's willingness to pay is uncertain. As Sherry explains in this exclusive stars interview, she is nevertheless convinced that the Chinese research and innovation ecosystem combined with an industrious work ethic will enable the technology to change our lives for the better.

*Michael SETTELEN: What does iCarbonX do? In other words, what is the value proposition of iCarbonX's products or services?*

Sherry XIAN: We want people to live a healthy life, up to 120 years of age, and of high quality. This is essentially also why I joined the company. Today, we pay attention to our health only when we get sick, so we react to a disease. When we then take a drug, we don't really focus on curing the actual cause of the disease. At iCarbonX, we want to prevent you from getting the disease in the first place. For this, we need AI. An example: one in four Chinese is pre-diabetic or diabetic. Diabetes is a lifestyle disease, not a genetic one. By regularly monitoring your glucose level and with the right intervention by a nutritional expert, you can lower the glucose level and never even become diabetic. Today, you need to poke your finger once per day to check your glucose level. With the right wearable and continuous monitoring, we can establish a personalized model, predict your glucose level and take the necessary measures. Isn't that much better?

*For such a diagnosis business, the key ingredient is data – large amounts of data. In Europe, we have very strict data protection regulations, in China arguably less so. You*

*are the Chief Data Officer. What are your constraints in obtaining data, and what are the major challenges in reading, or using the data?*

The regulations in China forbid you to send data abroad, so data obtained in China need to remain in China. We however insist on everybody signing a user agreement before giving us a sample. People in China have in general a lower threshold of how data is used. They are less sensitive. We are of course aware of the ethical conundrums, and so we are among the few to work with a so-called IRB, an Institutional Review Board. This means we are regulating ourselves to protect the users, on a voluntary basis. Another issue we have is the amount of data. It is still very expensive to produce omics data. To get genome for instance, you need to pay USD 200, for gut bacteria USD 100, and for DNA protein USD 2'000 is needed. This is still a huge challenge for us. If we can solve the cost issue, with the large population in China we can get a lot of data. The question is: who will pay for this data?

*iCarbonX was China's first biotech unicorn and the country's fastest unicorn when it achieved a USD 1bn valuation within 6 months. In 2018, about 100 tech start-ups became unicorns in China. China was flush with venture capital and some say it's a bubble. Since then, however, capital has dried up and many have encountered difficulties with funding or commercialization. What are the biggest challenges for iCarbonX?*

We have several products, from gene testing, to gut testing and personal biotics. The difficulty we are facing is clearly with commercialization. We need users to actually purchase our products and services. So it is a marketing question. We need to make the user better understand the value we provide. When we started, we really didn't have much of a clue on how to commercialize this idea. It was not important. For our founder WANG Jun, health is the most valuable thing, so he was convinced people would of course be willing to pay for it. But we need to concede that it is more difficult than we thought. So now we for example work together with health food companies that have an existing user base. Together we provide individualized dishes for clients. Another avenue we are taking is big companies in China, who as part of their employee benefit package offer annual health checks to their employees. These are promising areas, but also here, the data protection issue is still a bit tricky.

*For the Chinese government, AI is a priority, and among other areas it features prominently in the "Made in China 2025" industrial policy programme. How important is the government support, and how could iCarbonX benefit from this heightened attention to this technology?*

The Chinese government is extremely supportive. Especially the local government in Shenzhen understands the potential of the technology and is always looking for ways to provide a better environment for research and business. So with government support, we were able to establish our own Digital Life Research Institute. But also the Peng Cheng Laboratory, a provincial-level research lab, is all about AI. It shall become an international scientific innovation center in the Greater Bay Area. So the government has a lot of financial support for AI technologies. They fund R&D, provide the infrastructure such as office space, as well as housing for employees or tax incentives.

*Shenzhen is clearly a vibrant innovation ecosystem. If you compare the business and innovation ecosystem of Shenzhen with the one in Silicon Valley, what makes Shenzhen so valuable?*

We could also have gone to the US to develop our business, but here in Shenzhen we can get more users, more data for the same amount of money than in the US. This is actually the major reason I went back to China. The pace in China is so much faster. We

have branches in Boston, San Francisco and Israel, and their pace is at most one fourth of our pace in Shenzhen when it comes to R&D, developing a product, or creating an app. For them to work at China-speed would be impossible. They pay a lot of attention to a healthy work-life-balance. We don't have that luxury. We are under tremendous pressure by our investors. Although they knew very well that it would be a long-term investment, they still have expectations. So we work hard, probably not "996" as you often hear from other companies in China, but probably 995, so from 9am to 9pm, five days a week. We are rather easy going, so for our employees, this is optional. They can choose to work 955 if they complete all their work. I, however, work 24/7, non-stop.

*We are currently in a challenging international environment, running the risk of a technological decoupling between China and Western markets. For instance, your attempted acquisition of the US-company PatientsLikeMe was not approved by the US authorities (CFIUS). How do you see this technology war play out and how does it affect companies like iCarbonX?*

I think people will increasingly have to decide whether to go back to China, or in case they stay in the US, to stop collaborating with Chinese industry. Chinese doing research in the US are already facing more scrutiny than before. Collaboration between the two tech-ecosystems will become more difficult. China is now focusing on strengthening its self-reliance. So the government is pouring money into its own universities and wants its people to come back. I therefore expect a bifurcation of tech-ecosystems, one in China, and one in the West. Especially if Trump gets re-elected.

*Accelerated urbanization, globalization and new technologies are reshaping the world we live in. What do you expect the social impact of iCarbonX's products and services can and will be on individuals and society in China, and possibly the world? How will our lives be different?*

The social impact will be huge. If we bring people to listen to us, change their lifestyles and live longer, imagine the whole supporting system that's needed. This will also have an impact on social security systems. People probably need to work until they are 80 years old in future, but then still have 40 years where they want to have a high quality of life. People in future will increasingly be surrounded by digital data in their everyday lives. That data will be user friendly and come with individualized suggestions. The choice will in the end of course still remain with the individual.

*Would you say there are differences between the current Chinese entrepreneurs and Western entrepreneurs?*

Well, I am generally a big fan of Pony MA from Tencent. He wants to use science for the good, for a better future, and not just to make money. I think the new generation of Chinese entrepreneurs, also Jack MA, are very different from the previous one, like real estate magnate WANG Jianlin from Wanda, for example. They think about how to donate money, start charities, or how to help children in their hometowns. They have a big heart and are willing to share the wealth they made during China's economic boom. That is something I truly appreciate.



*Dr. **Sherry XIAN** is Chief Data Officer and Partner of iCarbonX, a Chinese artificial intelligence (AI) unicorn. Sherry and her colleagues track consumer health changes by using machine learning to analyze data including omics, phenotypes, smart devices, medical records and social profiles to make personalized recommendations for health-related solutions. Sherry holds a Ph.D. in Psychology from the University of Chicago and she received post-doctoral training from the Department of Neurobiology at Stanford University. She previously worked with President Obama, NASA, as well as with leading professors and private institutions in China and the US to manage several large projects in psychology and neurophysiology funded by the NIH, the NSF and the Sloan Foundation.*

*The interview was conducted by stars alumnus Michael SETTELEN, Economic Editor, Asia, [Neue Zuercher Zeitung \(NZZ\)](#), on the sidelines of the [stars Switzerland symposium 2019](#). The views expressed here are solely those of the interviewee and they do not necessarily represent or reflect the views of the stars Foundation.*

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