

Huizhou is envisioned as Guangdong Silicon Valley

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When talking about China Silicon Valley or Innovation Hub, the first place that comes to mind would be the media darling-Shenzhen. Following in Shenzhen's footsteps, the wave of innovation has not only been set off in its neighbouring cities such as Guangzhou and Dongguan, but also in Huizhou, where the local government is putting effort in building Guangdong Silicon Valley. This article will give a brief introduction on Huizhou's movement towards establishment of Guangdong Silicon Valley and its current Social Implementation¹ of innovation and advanced technology.

1. BACKGROUND

Huizhou occupies a pivotal position in Shenzhen-Dongguan-Huizhou Economic Circle² and lies in the core district of eastern Guangdong-Hong Kong-Macao Greater Bay Area (hereinafter "Greater Bay Area"). Since China's reform and opening up, it has been acting as one of the major industrial cities in Pearl River Delta (hereinafter "PRD") and has matured petrochemicals and electronic information industries as its pillar industries. Apart from undertaking overflowed industries from Shenzhen and Dongguan, over recent years, Huizhou has been accelerating its level of high-tech R&D activity, with the ultimate goal of evolving as an innovation hub for the emerging industries in Guangdong province.

Huizhou was designated as a part of the National Independent Innovation Demonstration Zones in PRD³ in 2015. According to the "Implementation Plan for the Construction of National Independent Innovation Demonstration Zones in PRD (2016-2020)" (Yuefu [2016] No.31), Huizhou is set to establish itself as an industrial base of cloud computing intelligent terminals, a national smart city and a Social Implementation hub of high-tech research achievements by fully utilizing its competitive advantages on pillar industries, building reinforcing platforms including Zhongkai High-tech Industrial Development Zone (hereinafter "Zhongkai HIDZ") and Daya Bay Economic and Technological Development Zone, as well as establishing Huizhou Tonghu Ecological and Smart Zone (hereinafter "Smart Zone") as an engine of growth. Looking to build on the national strategy, Guangdong Provincial Development and Reform Commission released the "General Development Plan for the Guangdong Huizhou Tonghu Ecological and Smart Zone (2017-2030)" (Yuefagaiquyu [2017] No.98, hereinafter "the Plan") in 2017 February,

¹ Originated from the term "social technology" raised by Japan Science and Technology Agency (JST), which refers to science and technology for the purpose of human society. Based on the foresaid concept, "social implementation" is defined as the application of technologies at solving social problem.

² A strategic concept raised by Wang Yang, the Guangdong Party Secretary then, based on the "Framework for PRD Region's Development and Reform Planning" released by the Council State in 2008. According to Wang, "Shenzhen-Dongguan-Huizhou Economic Circle is set to facilitate regional integration of eastern PRD. In 2014, Heyuan and Shanwei joined the economic circle and formed the "Shen-Guan-Hui (3+2) Economic Circle".

³ A pioneering demonstrative mechanism approved by the State Council to lead the nation's science and technological innovation. With Shenzhen and Guangzhou as its core, the zone is set to enhance innovation capability of the 9 cities in PRD including Zhuhai, Foshan, Zhongshan, Dongguan, Huizhou, Jiangmen, Zhaoqing to a new level so as to build a world-class hub for the emerging industries.

targeting at developing the Smart Zone to Guangdong Silicon Valley and National Pilot Zone for Green and Ecological City and drive the transformation from Made-in-Huizhou to Innovated-in-Huizhou.

2. OVERVIEW OF GUANGDONG SILICON VALLEY

Building of transport network centring on the Smart Zone



| Destination City | Highways | | Railways | |
|------------------|--------------|--------|-------------------------------|--------|
| | Destination | Time | Departure-Destination | Time |
| Huizhou | Huicheng | 30 min | Zhongkai-Huihuan | 5 min |
| Dongguan | Nancheng | 1 hr | Zhongkai-Tangsha | 15 min |
| Shenzhen | Futian | 1 hr | Zhongkai-Shenzhen North | 20 min |
| Guangzhou | Tianhe | 1.5 hr | Huicheng South-Guangzhou East | 30 min |
| Hongkong | West Kowloon | 2 hr | Zhongkai-West Kowloon | 1 hr |

Picture 1: Geographic location and transport network of the Smart Zone

Reference: Zhongkai HIDZ Investment Guidebook and edited by MUFG Bank

Ganzhou-Shenzhen High-speed Railway, which is estimated to be opened in 2020. Apart from the above line, existing Xiamen-Shenzhen Railway, and Guangzhou-Shantou High-speed Railway with expected opening in 2021, also pass through Huizhou and have stations set near the Smart Zone.

Following the saturation of Shenzhen Airport, Huizhou Airport is set to become Shenzhen's second airport. At present, expansion is under progress and the launch of international terminal is also under planning. With the development of modern transport infrastructures, travelling time from Huizhou to Shenzhen, Guangzhou and Hong Kong is going to be significantly reduced, so as to create a "Shenzhen-Guangzhou-Huizhou 30-minute living circle" and a "Greater Bay Area one-hour Living Circle", allowing an easier access to foreign countries from Huizhou.

The Smart Zone, lies to the west of Zhongkai HIDZ⁴, a national base of information and intelligence terminals, and embraces Tonghu, the largest inland freshwater wetland in Guangdong Province. Bordering Shenzhen Longgang to the south and Dongguan Xiegang to the west (20 mins by car), the Smart Zone will act as an east gateway of the Greater Bay Area with traffic infrastructure interlinks the adjacent cities to be ready by 2020.

There are four highways passing through the Smart Zone. The two running north-south connect Huizhou with Changsha, Wuhan and Shenzhen. The other two running west-east link the Smart Zone with Chaozhou, Heyuan and Dongguan. It is noticeable that time to travel from Huizhou to Dongguan, Guangzhou, Zhongshan and Heyuan will be shortened by 30 minutes with the opening of Heyuan-Huizhou-Dongguan Highway in 2020.

Concerning the rail transport, it is worth mentioning that movement from the Smart Zone ("Zhongkai Station") to Shenzhen North Station will only take approximately 20 minutes by taking

⁴ Since its official inauguration in March 2018, the Smart Zone has kept independent administration from the Zhongkai HIDZ and exerted full power to handle its daily operations concerning economic affairs and investment attraction. However, dealing with social affairs such as land acquisition, relocation and removal of existing edifice are exceptional.

Development condition of the Smart Zone

With a total planned area of 128km² including 38km² for urban development, the Smart Zone has attracted an overall investment of about RMB300 billion within one year. At present, the zone is developing intelligent manufacturing, R&D and application of advanced technology at a torrid pace.



Picture 2: Overview of the Smart Zone

Reference: Smart Zone Guidebook and edited by MUFG Bank

One of the three China-Korea Industrial Parks⁵ recognized by the State Council is located in the Smart Zone. Focusing on attracting investment from advanced manufacturing industry, the Park offers preferential policies including yearly rebate⁶ and subsidies for office rental and purchase⁷ to companies meeting specific investment and tax contribution requirements. It is noticeable that not only Korean-funded companies, but also investment from other foreign and local companies, can enjoy incentives offered by the Park. In addition, Headquarter Economic Zone, which is located closest to Zhongkai Station on Ganzhou-Shenzhen High-speed Railway, is designated as the centre of the Smart Zone where office buildings for company headquarter, R&D centre, incubator and hotel are under construction. Along with

the Science and Education Innovation Park, the above three government-led industrial parks are keenly developing infrastructure and working to attract inward investment. At present, these parks have attracted investment intentions from leading companies such as Shenzhen Electronics Group and SK Group, as well as international R&D platforms such as IMEC and Harbin Institute of Technology. It is expected that a cluster for industry-university collaboration will be formed to promote the development of Guangdong Silicon Valley.

Apart from the above government-developed parks, the Smart Zone is also home to Tonghu Sci-tech Town, a high-tech town developed by Country Garden, one of the leading property developers in China. Partnered with world-class information technology solution providers such as Cisco and Accenture, Country Garden is constructing the 8km² Sci-tech Town as a new high-tech and smart city. In September 2018, phase 1 of the Sci-tech Town, namely Country Garden Innovation Town (hereinafter "Innovation Town"), was officially inaugurated. The following will provide a brief introduction on the Innovation Town.

3. DEVELOPMENT OF SMART CITY ENVIRONMENT IN THE INNOVATION TOWN

With a planned area of 2km², the Innovation Town has been transformed from blue print into reality in only about one year since ground-breaking in May 2017. At present, 27 high-tech institutions and innovation carriers including Keru Cloud, Farad Electric and Shenzhen Yitao has settled in the town, of which 11 are certified as National High-tech Enterprise. In addition, in hope to build an industrial cluster of IoT application and innovation, an industry development fund with a capital scale exceeding RMB2 billion has been set up to provide financial aid to resident

⁵ Yancheng in Jiangsu Province, Yantai in Shandong Province and Huizhou in Guangdong Province

⁶ Company with investment capital over USD10 million is eligible for a reward of 40-60% of the company's contribution to the local treasury for the first 5 taxable years with a maximum reward per year at RMB10 million. ("Several Policies and Measures for Accelerating Development of the China-ROK (Huizhou) Industrial Park" (Huifu[2018] No.39))

⁷ Company fulfil specific criteria will be offered a subsidy of 30% of the rent with the longest subsidizing period of 3 years and the ceiling amount of RMB1 million per annum, or a one-time subsidy at a standard with RMB500/m² with a ceiling amount of RMB2 million.



Picture 3: A corner of the Innovation Town

enterprises, especially those with IoT as their core business. Surrounded by the wetland, the Innovation Town adopts a modern construction style that blends into the nature while cutting-edge technologies such as AI robot, drone and automatic driving have been actively applied to different aspects of life. In an effort to address the application of IoT technology and embody smart city concept, a selection of about 20,000 points in public facilities such as restaurants, parking lots and hotels have been connected to nearly 50 systems currently. Once entering the town, you will be surrounded by a great number of emerging technologies.

Smart Transport

Currently, 3 self-driving bus developed by Baidu has been deployed to commute among facilities in the Innovation Town. In addition, the town has developed a mobile application of which the availability of parking lots could be verified at real time, facilitating parking itself and optimizing utilization efficiency of parking spaces. In the near future, systems including "facial recognition shuttle bus", "smart car-sharing", "smart charging stand" and "smart transport guidance" will be introduced by using emerging technologies such as AI and information technology to realize flawless information exchange and data analysis of people, cars and things.



Picture 4: Baidu driverless bus "Apollo" in Innovation Town

Smart Life



Picture 5: Smart Serving Table

Inside the smart restaurant, one can experience the facial recognition technology and have the payment made in seconds without carrying any cash, card or mobile. Besides, the Smart Serving Table offers analysis on nutritional contents such as fats, carbohydrate and calories of the chosen food and gives one-on-one nutritional health advices. An AI robot is deployed for providing home-delivery services with optimized route to designated places in the Smart City. Apart from the restaurant, you may also experience the integration of high-tech and comfortable living environment in the Smart Hotel and other town facilities. For example, you may find fire-fighting system, convenience stores, vending machines and even garbage bins being smartized, and drones with cutting-edge technologies such as patrol security and face tracking are widely applied and has penetrated into the living of Innovation Town.

Brain of the Innovation Town



Picture 6: Brain of the Innovation Town-Smart City Control Centre

The brain for the town, namely Smart City Control Centre, connects all people, thing and technologies in the town together and manage them in an orderly way. By fully utilizing internet, IoT and big data platforms, a full range of data concerning the systematic operation of the town becomes accessible within the control room. Information related to industry investment,

operation, security, fire-fighting, transportation and energy are collected, analysed and visualized in form of data, graph and video and to be monitored on the 170m² screen in the centre 24 hours a day, so as to improve convenience and safety level as well as achieve effective resources allocation.

4. CONCLUSION

Riding the tide of innovation, Huizhou has turned its steering from undertaking overflowed industries from Shenzhen and Dongguan to constructing itself as a new driving force for innovative industries and a model of Future City. Despite Guangdong Silicon Valley is still in its early development stage, Huizhou is on its way to undertake the industrial transfer in accord with national strategies. By taking advantages of its excellent geographical location in Greater Bay Area and Shenzhen-Dongguan-Huizhou Economic Circle, Huizhou is expected to complement and collaborate with its neighbouring cities and achieve further economic development in the future.

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