

Exploring the **Greater Bay Area Start-up Ecosystem**



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Exploring the Great Bay Area Start-up Ecosystem

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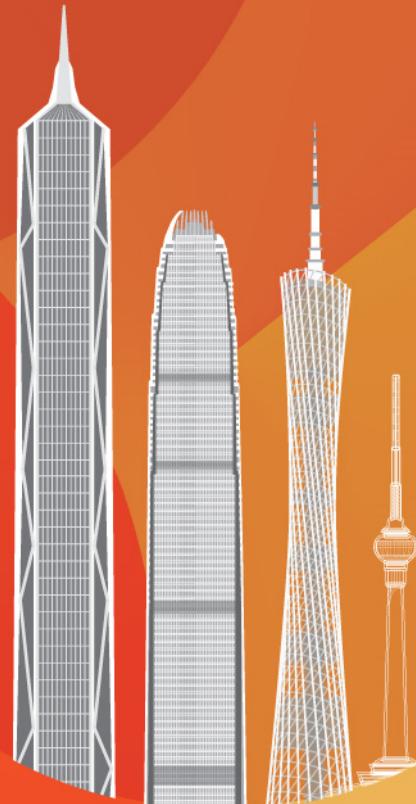


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Interview with Wei Lixin, Vice President of Macao Young Entrepreneur Incubation Centre



Executive Summary





Executive Summary

HKTDC Research, in collaboration with the *HSBC*, conducted a questionnaire survey and a series of in-depth interviews¹ with start-ups enterprises in the Guangdong-Hong Kong-Macao Greater Bay Area (GBA) in mid-2021. This allowed for an in-depth assessment of the development trends relating to the GBA's start-up ecosystem as well an evaluation of its overall performance, while also facilitating an understanding as to how start-ups view the GBA's business environment. Based on the subsequent findings, it was then possible to analyse the way in which Hong Kong's role as a GBA start-up platform may be optimised.

Background and Objectives

The promulgation of the *Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area* (the *Outline*) in February 2019 marked the launch of the development strategy for the Greater Bay Area (GBA) formed by two special administrative regions (Hong Kong and Macao) and nine mainland cities (Guangzhou, Shenzhen, Zhuhai, Foshan, Huizhou, Dongguan, Zhongshan, Jiangmen and Zhaoqing). The GBA is a hub of advanced manufacturing, modern services, technology and innovation. It is unique in that Guangdong, Hong Kong and Macao have between them three local governments, two systems, three legal jurisdictions, three sets of customs policies and three different currencies. Despite the challenges this poses, it has been possible to establish the orderly flow of personnel, capital, goods and information in the GBA to bring shared opportunities to the area. The *Outline* supports in-depth co-operation between the three regions in the fields of entrepreneurship and incubation, commercialisation of research, international technology transfer and technology services to build research incubation bases, youth entrepreneurship and employment bases, and other platforms.

The *Outline of the 14th Five-Year Plan for the Economic and Social Development of the People's Republic of China and the Long-Range Objectives Through the Year 2035* (the *14th Five-Year Plan*) adopted by the *National People's Congress* in March 2021 provides China with a development blueprint and programme of action for the years 2021-2025. The *14th Five-Year Plan* reaffirms Hong Kong's important role in China's overall development and enhances its scope for development in many important areas.

¹ The opinions and views expressed are those of the interviewees and do not necessarily reflect the views of HKTDC or HSBC. HKTDC or HSBC shall in no way be responsible for the accuracy, completeness or timeliness of the information provided by them, and for any loss associated with the use of such information.



It consolidates Hong Kong's position in four traditional areas, as an international financial centre (including its offshore renminbi business, international asset management and risk management), an international shipping centre, an international centre for commerce and trade, and a centre for international legal and dispute resolution services in the Asia-Pacific region. In addition, it promotes Hong Kong in four emerging areas, as an international aviation hub, an international innovation and technology hub, a regional intellectual property trading centre, and an East-meets-West centre for international cultural and art exchange.

The *Outline* and the *14th Five-Year Plan* present huge opportunities for Hong Kong's start-ups and the innovation and technology sector. In order to understand the start-up ecosystem in the GBA, *HKTDC* and *HSBC* have jointly conducted a study on Hong Kong's role as a start-up platform in the GBA. The purpose is to collect opinions of start-ups in the GBA on the business environment in the region, understand the major trends and characteristics of the start-up ecosystem in the GBA, and analyse ways to strengthen Hong Kong's position as a GBA start-up platform.

The study consisted of a questionnaire survey and in-depth interviews. *HKTDC Research* conducted the survey online and by phone in August and September 2021 and successfully surveyed 308 start-ups established in or after 2016 that have set up headquarters or offices in the GBA. They were asked about the development trends and performance of the start-up ecosystem in the GBA as well as their opinions on Hong Kong as a GBA start-up platform. In-depth interviews were conducted with 10 stakeholders from different sectors including founders of start-ups in the GBA, senior executives of business incubators and senior executives of start-up support platforms. The study covered major industries of the GBA start-up ecosystem, including biotechnology, information technology and hardware manufacturing, innovation and professional services, new economy and new retail. The study analysed the data collected in the survey and integrated these with the views collected from the in-depth interviews.

GBA start-up ecosystem

Start-ups provide innovative technologies, products and services and inject new growth into the economy. The governments of cities in the GBA have made great efforts to nurture start-ups and increase their competitiveness through a range of policies and funding schemes. By encouraging research and development, attracting innovation and technology talent, and promoting the commercialisation of research,



they are able to strengthen co-operation and mutually beneficial exchange between cities in the GBA.

The GBA's concentration of venture capital and local and overseas science and technology talent provides a powerful start-up ecosystem. Shenzhen and Hong Kong are both among the world's top 50 cities in the *Global Startup Ecosystem Index Report 2021*, holding the 21st and 32nd spots, respectively. Growth driven by innovation and technology is the new trend in global economic development. The Guangzhou-Shenzhen-Hong Kong technology cluster also functions as a strategic business platform and technology marketplace in Asia, and is part of a growing local research cluster. It is ranked as the world's second-most active cluster in terms of patents and scientific publications, according to the *Global Innovation Index 2020*.

In order to further promote exchange and co-operation in innovation and entrepreneurship in Guangdong, Hong Kong and Macao, the government of Guangdong released the *Implementation Plan for Redoubling Efforts to Establish Hong Kong and Macao Youth Innovation and Entrepreneurship Bases*. The plan calls for Hong Kong and Macao youth innovation and entrepreneurship bases in each of the three free trade areas of Nansha in Guangzhou, Qianhai in Shenzhen and Hengqin in Zhuhai. One such base is planned for each of the nine Pearl River Delta cities by 2025. The GBA is an ideal destination for innovation and entrepreneurship. The study found that 81% of respondents were satisfied with the GBA start-up ecosystem. As the GBA develops, its 11 cities are expected to leverage their respective advantages to further promote the co-ordinated development of the region's start-up ecosystem.

Entrepreneurs and start-ups

Governments, universities and tertiary institutions in GBA cities have all actively fostered campus start-ups in recent years. They provide support and funding to encourage teacher-student teams to combine their innovative ideas with research to generate products or services of value to the market and society. Schemes include the *Technology Start-up Support Scheme for Universities* of the *Innovation and Technology Commission of Hong Kong*, the *Innovation and Entrepreneurship Scheme* of the *University of Macau Development Foundation*, and the dedicated support scheme for university students of the *Shenzhen University* venture park. Thus, the GBA start-up ecosystem is full of well-educated young entrepreneurs. The study showed that nearly all entrepreneurs (97%) have at least a first degree, with 21% and 10% respectively holding a master's degree or a PhD. Most of these entrepreneurs



have not yet reached middle age: 20% are only 22-30 years old while 61% are aged 31-40.

As one of the most open and international regions of China, the GBA attracts outstanding entrepreneurs from abroad thanks to its huge development prospects. Many overseas entrepreneurs were initially posted to the GBA by the companies they worked for, which gave them an opportunity to gain a deep understanding of the business environment and industrial operation model in the GBA and see the market opportunities in the region. This was what prompted them to start their business in the GBA.

Start-up ecosystem: strengths and weaknesses

Respondents were asked to rate the city where their headquarters is established; start-ups in Shenzhen were most satisfied with the local start-up ecosystem, with Hong Kong coming second and Guangzhou taking the third spot. Of the four categories supporting the development of start-ups, namely “R&D environment”, “business environment”, “funding availability” and “entrepreneurial support”, each city has its own particular strengths and weaknesses.

In terms of R&D environment, Shenzhen boasts national-level “R&D facilities” and “R&D talent availability”. Hong Kong not only has professionals trained by local universities but also attracts world-class universities and research institutions. The two places can further strengthen co-ordination to commercialise their research. However, high “human resources costs” facing start-ups in both Hong Kong and Shenzhen are putting pressure on their operations.

In terms of business environment, start-ups in Shenzhen highly rated the city’s “flow of information and capital”. In addition to benefiting from this flow within the country, companies in Shenzhen can also make use of international connections in nearby Hong Kong. Hong Kong has very mature financial, legal and other professional services and its practitioners have considerable knowledge and experience of overseas and mainland markets. It is not surprising that start-ups in Hong Kong gave Hong Kong’s “professional services” the highest rating.

There is little difference between the levels of satisfaction of start-ups in Shenzhen and Guangzhou and their counterparts in Hong Kong with support from “private funding” and “government and public funding”. However, shortage of funds is a major challenge facing all start-ups.



In terms of support for entrepreneurship, a rich start-up environment has grown up in the GBA in recent years, with many incubators and innovation and technology parks providing guidance and support. However, start-ups in Shenzhen, Guangzhou and Hong Kong all believe that local governments could motivate more and play a pioneering role by using the innovative products and services developed by start-ups to increase public confidence.

Challenges and opportunities

With a population of over 86 million, the GBA represents a huge market and presents great opportunities. However, the study found that start-ups in the GBA are facing major challenges, including difficulties in finding investors and winning the trust of clients. Only about 30% of respondents have plans to expand their sales in the next three years. The main reasons include shortage of funds, market uncertainty, and keen market competition. The *Covid-19* pandemic has also slowed the expansion of some start-ups.

In spite of everything, start-ups in the GBA are still optimistic about their development prospects, with 71% of the respondents expecting to see their income grow by 25% or more in the next three years. Classified by industry, anticipated growth is fastest in biotechnology, with nearly 30% of biotech start-ups expecting to see their income grow by 100% or more in the next three years. The potential for developments in biotechnology to improve healthcare are more widely appreciated due to the pandemic, thus creating new opportunities for biotech start-ups.

The GBA is a powerful hub of advanced manufacturing, modern services and innovation and technology. If the cities of the GBA leverage their respective advantages for co-ordinated development, they can further increase the competitiveness of the GBA start-up ecosystem. Hong Kong, as the most international city in the GBA, has a leading role to play as a financial, shipping and commercial centre. Developing Hong Kong into an international innovation and technology hub will broaden the high tech potential of the GBA.



Survey Overview





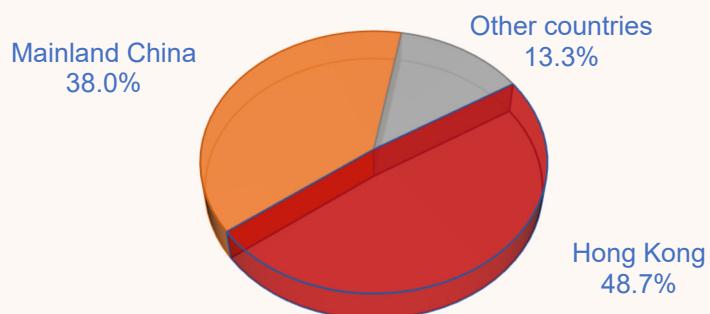
Survey Overview

HKTDC Research conducted an online and telephone questionnaire survey between August and September 2021. In all, a total of 308 start-up founders responded to the survey. All of the participating start-ups were established in 2016 or later and had headquarters or offices in the Guangdong-Hong Kong-Macao Greater Bay Area (GBA), a region extending across 11 cities – Hong Kong, Macao, Guangzhou, Shenzhen, Zhuhai, Foshan, Huizhou, Dongguan, Zhongshan, Jiangmen and Zhaoqing. The purpose of the survey was to gather information on the development trends and performance of the GBA's start-up ecosystem, while evaluating the scope for Hong Kong to function as one of the region's key start-up platforms. Throughout the survey period, in-depth interviews were held with 10 stakeholders as the basis for formulating a series of key case studies. Within its remit, the survey covers many of the major sectors of the GBA start-up community, including biotechnology, information technology / hardware manufacturing, innovation and professional services, the new economy, and new retail.

Survey Respondent Profile

Headquarters Location	Share (%)
Hong Kong	56.8
GBA mainland City	38.3
Guangzhou	10.4
Shenzhen	16.9
Other (Zhuhai, Foshan, Huizhou, Dongguan, Zhongshan, Jiangmen, Zhaoqing)	11.0
Outside the GBA but with offices in the GBA	4.9

COUNTRIES/ TERRITORIES FOUNDERS COME FROM



Base: All respondents (n=308)
Source: HKTDC Greater Bay Area Start-Up Survey 2021



Industry	Share (%)
Biotechnology (including biotechnology, foodtech, healthcare and medical technology)	12.0
Information technology / hardware manufacturing (including computer and information technology, artificial intelligence, robotics and related hardware manufacturing, such as Internet of Things, 3D printing, prototypes and wearables)	31.2
Innovation and professional services (including design and marketing, professional and consultancy services, data analytics, digital entertainment and gaming, education and learning, and logistics technology)	31.8
New economy (including fintech, smart city, sustainable / green technology, and new energy)	11.7
New retail (including e-commerce and retail technology)	13.3

Stage of Business	Share (%)
Early stage – Concept and research, pilot trials or testing	2.9
Growth stage – Product prototype or service model already developed, has started selling products or services	35.4
Mature stage – With mature products or services, with steady profit or customer base, undergoing further development	61.7

In-depth Interviews

In-depth interviews were held with start-up founders and senior executives working at either business incubators or start-up support platforms with a view to gaining their perspectives on Hong Kong's potential role as a GBA start-up platform.



Chapter 1:

Start-up Ecosystem in the Greater Bay Area - An Overview





Chapter 1: Start-up Ecosystem in the Greater Bay Area – An Overview

The kind of innovative technology, products and services developed by start-ups act to create wealth, while opening up new markets, increasing job opportunities and boosting economic growth. Pretty much every government is committed to grooming more ‘unicorns’ (start-ups that are less than 10-years-old but have a valuation in excess of US\$1 billion) by assisting new businesses through various supportive measures and ensuring access to investment funds. Although the Covid-19 pandemic has posed unprecedented challenges at every level of society, many start-ups have seen opportunity in this adversity. Making good use of their agility and positive attitude to working with other companies, while assisting others in solving problems during the pandemic, many have successfully demonstrated their utility within their individual markets, as well as their ability to create value and achieve growth.

According to the *Global Startup Ecosystem Index Report 2021*, released by the global start-up research institute *StartupBlink*, the US start-up ecosystem is both massive and mature, ranking first in the world overall. Its most outstanding industries include e-commerce, retail, education, energy and environmental protection. Trailing the US, in the second to sixth positions, are the UK, Israel, Canada, Germany and Sweden. For its part, China jumped seven spots from its 2020 ranking and is now seventh globally and first in the Asia-Pacific region.

The Asia-Pacific’s start-up ecosystem has undoubtedly enjoyed high-speed growth in recent years. While China has a slight lead, start-up hubs have also mushroomed in other Asian countries – most notably Singapore, South Korea, India and Japan. The region’s start-ups are active in a wide range of business sectors, including e-commerce, retail, education, fintech, health, transportation, social and leisure. Unicorns in the Asia-Pacific region are also something of a rising force. According to *CB Insights* data, there were more than 800 unicorns around the world as of 18 September 2021, with China ranking second in terms of number and valuation with 159 unicorns worth a combined \$534.8 billion. Other countries and territories that performed well in the region were India with 38 unicorns (valued at \$125.3 billion), South Korea with 11 (\$24.7 billion) and Singapore with eight (\$24.1 billion).

The mainland government’s focus on publicising innovation and entrepreneurship, advancing the transformation and upgrading of the industrial structure and promoting high-quality economic development has proven instrumental to the vigorous



development of China's start-up ecosystem. In the *14th Five-Year Plan (2021-2025) for National Economic and Social Development and the Long-Range Objectives Through the Year 2035*, it has clearly encouraged innovation and entrepreneurship on the part of young people, while advocating many policies designed to improve the environment for such endeavours. To date, these moves include "propelling reforms of innovative and start-up enterprises and establishing specialised, market-driven technology transfer institutions and nurturing technology management teams" and "improving preferential tax policies that encourage innovation in small and medium-sized science and technology enterprises".

The government also promulgated the *Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area (GBA)* on 18 February 2019. This established Hong Kong, Macao, Guangzhou and Shenzhen as the four core engines set to drive the GBA's development, with Zhuhai, Foshan, Huizhou, Dongguan, Zhongshan, Jiangmen and Zhaoqing the key node cities. With a total population of more than 86 million, the GBA is the largest and most populous bay area in the world. Its GDP was recorded at \$1,668.9 billion in 2020, comparable to that of many of the developed economies and a sure indication of its huge potential. As one of China's major development strategies, the *14th Five-Year Plan* provides clear support for the GBA's evolution into an international innovation and technology hub with deep integration in such areas as business incubation, fintech and the commercialisation of research results / technologies. Leveraging the advantages of Hong Kong and Macao in opening up the Pearl River Delta (PRD) region in terms of industrial innovation, the GBA will also be able to enhance its ability by pooling international innovation resources and commercialising technological achievements, ultimately becoming part of the global innovation network.

GBA start-up ecosystem

Its concentration of venture capital and outstanding local and overseas science and technology talent gives the GBA a powerful start-up ecosystem. The GBA has two cities among the world's top 50 in the *Global Startup Ecosystem Index Report 2021*, with Shenzhen and Hong Kong holding the 21st and 32nd spots, respectively.

In addition, the GBA boasts world-class infrastructure with regard to science and technology, with its rich entrepreneurship resources supporting the growth of start-ups. According to the 2020 edition of the report on business incubation in China released by the *Torch High Technology Industry Development Center of the Ministry of Science and Technology*, Guangdong leads the country with 1,013 incubators and 952



makerspaces, accounting for 19% and 12% of the respective national totals. Incubators and makerspaces not only provide start-ups with common facilities for R&D, production, communication and office space, but also offer support in terms of training, financing and marketing in order to help reduce the risks and costs of start-ups and promote the commercialisation of R&D achievements.

In terms of R&D, repeated breakthroughs in research have fuelled the development of innovation and technology in the region and created great opportunities for start-ups. A medical-device company, for instance, has developed a dual-therapy stent based on bio-materials, while a university has won international recognition for its revolutionary non-invasive prenatal testing. These and other research findings have laid a solid foundation for start-ups in the GBA. The Guangzhou-Shenzhen-Hong Kong technology cluster formed by innovation and technology industries in Hong Kong, Shenzhen and Guangzhou also functions as a strategic business platform and technology marketplace in Asia, while also being part of a growing local research cluster. Impressively, it is ranked as the world's second-most active in terms of patents and scientific publications, according to the *Global Innovation Index 2020*.

In order to further promote exchanges and co-operation in innovation and entrepreneurship in Guangdong, Hong Kong and Macao, the government of Guangdong released the *Implementation Plan for Redoubling Efforts to Establish Hong Kong and Macao Youth Innovation and Entrepreneurship Bases*. This mainly involves establishing Hong Kong and Macao youth innovation and entrepreneurship bases in each of the three free trade areas of Guangzhou's Nansha, Shenzhen's Qianhai and Zhuhai's Hengqin and establishing at least one such base in each of the nine PRD cities by 2025. The provincial government also offered a range of preferential policies to encourage more young people from Hong Kong and Macao to settle in these bases for innovative and entrepreneurial undertakings. The *Opinions on Promoting the High-Quality Development of Hong Kong and Macao Youth Innovation and Entrepreneurship Bases* stipulated: Young people from Hong Kong and Macao will be offered rental subsidies of up to RMB6,000 a year for a maximum period of three years for successfully establishing start-ups in these bases. In addition, a lump sum grant of RMB10,000 will be given to first-time start-ups. Young entrepreneurial teams that have won national or provincial innovation and entrepreneurship awards and settled in these bases will be offered matching subsidies equivalent to 100% of their awards.

We can therefore see that the GBA – with its well-developed economy, leading innovative ability, active innovation and entrepreneurship atmosphere and sound



business environment – is an ideal destination for innovation and entrepreneurship. Fuelled by the GBA's development, its 11 cities will leverage their respective advantages to promote deep integration and further promote the co-ordinated development of the region's start-up ecosystem.

Hong Kong

Hong Kong's technology innovation and start-up ecosystem is thriving. According to a survey conducted by *Invest Hong Kong (InvestHK)*, the number of start-ups in the city increased by 68.5% from the 2017 figure to 3,755 in 2021. The number of employees also increased by 118% to 13,804 persons. They were mainly involved in fintech, e-commerce/supply chain management/logistics technology, and professional or consultancy services.

Hong Kong ranked 11th in infrastructure among the 131 economies in the *Global Innovation Index 2020*. As the two major start-up incubators in the territory, *Cyberport* and the *Hong Kong Science Park* provide world-class laboratories, production hubs and working space and support start-ups for developing ground-breaking and brand-new solutions. Each has its own focus while maintaining collaboration, and together they have nurtured large numbers of outstanding start-ups, including nine unicorns. The former targets digital technology such as fintech, insurance technology, big data analytics, e-sports and digital entertainment, while the latter focuses on the nurturing of deep-tech companies² such as biotechnology, precision engineering and robotics. In order to meet the demand of tech firms for research space and facilities, the government has set aside resources for the expansion of *Cyberport* and *Hong Kong Science Park*. The plan includes building more laboratories, offices and co-working space to strengthen Hong Kong's research and innovation collaboration facilities.

The *Hong Kong Innovation and Technology Commission*, the *Hong Kong Science and Technology Parks Corporation (HKSTP)* and *Cyberport* have launched a number of funding programmes to provide financial support to science and technology start-ups in the territory. These include the *Innovation and Technology Venture Fund*, the *Technology Start-up Support Scheme for Universities*, *HKSTP Incubation*, *Cyberport Creative Micro Fund* and *Cyberport Macro Fund*.

² Deep tech refers to frontier science and technology with important influence on the development on human society.



Hong Kong and Shenzhen are also joining hands to develop the *Hong Kong-Shenzhen Innovation and Technology Park*. Strategically located in the Lok Ma Chau Loop bordering Shenzhen, the park will become Hong Kong's largest innovation and technology platform upon completion. This base with "two parks within the same zone" can fully make use of the advantages of Hong Kong and Shenzhen to invite the world's top-notch companies, research institutions and universities to set up key scientific research and co-operation bases in the park and promote its development of innovation and technology.

Macao

Following the launch of the *Young Entrepreneurs Aid Scheme* by the *Macao Special Administrative Region Government* in 2013, development of youth innovation and entrepreneurship has become a growing trend and obvious improvements have been made in Macao's entrepreneurial atmosphere and business environment. After the *Macao Young Entrepreneur Incubation Centre* was approved as the first national makerspace in Hong Kong and Macao in 2018, Macao's integration with mainland innovation and entrepreneurship resources, young people and enterprises was further strengthened, giving more room for its innovation and entrepreneurship development.

Given Macao's monolithic industrial structure and relatively small market, there is limited room for entrepreneurship in the city. Thus, many would-be start-ups turn their eyes to mainland cities in the GBA, with the majority opting for neighbouring Zhuhai. The *Macao-Hengqin Youth Entrepreneurship Valley* has incubated 445 projects as of September 2021, with more than half (244) coming from Hong Kong and Macao. Zhuhai issued the *Employment (Start-up) and Skills Development (Training) Subsidy Measures* in 2019 to attract more young people from Hong Kong and Macao to go there to start their business with start-up and training subsidies, housing subsidies, entrepreneurship aid and rental subsidies. This further boosted exchanges and co-operation in innovation and entrepreneurship in the GBA.

Macao is an important platform for promoting co-operation between China and Portuguese-speaking countries. The *China-Portugal Youth Innovation and Entrepreneurship Exchange Programme* launched in 2017 encourages Macao's young entrepreneurs to visit Portugal to get to know the local market and explore co-operation and development opportunities, thereby further strengthening Macao's role in China-Portugal economic and trade co-operation services.



Guangzhou

Guangzhou, the provincial capital of Guangdong, has solid comprehensive strength and a sound industrial system. With a rapidly growing innovation and technology sector, the city has attracted an influx of technology start-ups. The city led the country with a cumulative total of 30,000 technology-based small and medium-sized enterprises in 2020. According to its *14th Five-Year Plan*, the city will in future make all-out efforts to develop three major emerging industries – next-generation information technology, smart and new-energy vehicles, and biomedicine and healthcare.

Technology business incubators are important engines propelling the development of technology-based enterprises. Guangzhou has been making positive efforts to strengthen its entrepreneurship incubation platform to provide start-up businesses with a good start-up ecosystem in recent years. There were 405 technology business incubators and 294 makerspaces in the city as of December 2020. Seven incubators have passed national certification, ranking first in the country. They have successfully incubated more than 3,000 high-tech enterprises and 51 listed companies.

Guangzhou has excellent youth innovation and entrepreneurship bases that provide young people from Guangdong, Hong Kong and Macao with all kinds of support to help them in their innovation and entrepreneurship endeavours. For example, the *South China Advanced Materials Innovation Park*, a nationally accredited technology business incubator, has its focus on new materials, biomedicine, electronic information, energy conservation and environmental protection, and high-tech services. *Chuang Hui Gu* (hub of creativity, innovation and entrepreneurship – cultural and creative community for young people in Guangdong, Hong Kong and Macao) caters to cultural and creative talent and focuses on new and high technology, internet, cultural and creative industry and e-commerce. In addition, the *Home of Hong Kong and Macao Youth in Tianhe* has four youth innovation and entrepreneurship bases under its banner. In a bid to further improve the city's environment for entrepreneurship, the Guangzhou municipal government released a checklist for handling subsidies for further stabilising employment and promoting entrepreneurship and offered lump-sum subsidies to start-ups. Entrepreneurs are also being encouraged to return to their hometowns to establish business incubation bases through a lump-sum subsidy scheme for hometown business incubation bases.



Shenzhen

Home to numerous high-tech companies and start-ups, Shenzhen boasts the highest concentration of start-ups in the country. Small and medium-sized firms, which account for 63% of the total number of businesses, are most active. According to a recently published report on city vitality for young entrepreneurs in China, Shenzhen excels in three areas, namely government support, economic environment and business incubation. It ranks third in overall city vitality index and is one of the preferred locations for youth entrepreneurs to start their businesses.

Independent innovation is Shenzhen's main development priority. The number of national high-tech enterprises in the city jumped to 18,645 in 2020 from 5,524 in 2015. It also leads China's large and medium-sized cities in international patent applications and domestic patent grants under the *Patent Cooperation Treaty*, and is at the forefront of innovation in areas such as 5G technology, internet, gene sequencing, new-energy vehicles and drones.

Shenzhen offers a variety of subsidies to encourage and support independent innovation. The city's measures for supporting and subsidising independent entrepreneurship states that qualified start-ups may apply for outstanding start-up project special subsidies, start-up rental subsidies, subsidies for job creation, etc. There are also youth entrepreneurship bases in the city to promote business start-ups by young people, as well as 141 business incubators and 281 makerspaces as of December 2020. These include the *Technology Business Incubator of Shenzhen Virtual University Park*, the *Chaihuo Makerspace, Makerspace Workshop*, as well as the *Shenzhen-Hong Kong Youth Innovation and Entrepreneurship Base* in Nanshan iPark and *Shenzhen-Hong Kong Youth Innovation and Entrepreneur Hub* in Qianhai, both of which are immensely popular for Hong Kong start-ups.

Other GBA cities

Apart from Guangzhou and Shenzhen, Zhuhai is another popular destination for start-ups. Leisure tourism, healthcare, e-commerce and cross-border financial services are the most common types of business for start-ups. Up to 2019, there were 35 technology business incubators and 35 makerspaces in the city.

Hengqin has the highest concentration of Macao-funded businesses on the mainland. In addition to support from the *Macao Hengqin Youth Entrepreneurship Valley* and other incubators, the *University of Macau* and the *Macao University of Science and Technology* have also established industry-university-research demonstration bases



in Hengqin. Macao's four key national laboratories also have branches in Hengqin to provide one-stop industry-university-research growth service to start-ups and their outstanding research projects. The *Implementation Rules of the Interim Measures for Further Supporting Innovation and Entrepreneurship by Macao Youth in Hengqin* released by the *Macao Affairs Bureau of the Administrative Committee of Hengqin New Area* in 2020 further supports innovation and entrepreneurship by Macao youth in Hengqin in different respects, such as funding support, platform building, talent award and improvement of start-up environment.

As traditional manufacturing centres, Dongguan, Foshan and Huizhou are stepping up their efforts to build themselves into new first-tier cities of a higher level. Their innovation and entrepreneurship have significantly gathered momentum under the impetus of the *14th Five-Year Plan* and the *Outline Development Plan for the Guangdong-Hong Kong-Macao GBA*. They aim to soon develop into advanced centres for high-end manufacturing, such as electronic information manufacturing, advanced equipment manufacturing and other innovative industries that combine science and technology with their traditional strengths. Through creating synergy, the GBA cities will be able to form a technology industry chain covering upstream, midstream and downstream operations – conducting basic research and technology R&D in Hong Kong, Shenzhen and other key cities, making prototypes and conducting tests in Shenzhen, and mass-producing them in mainland cities with a dominant manufacturing industry – in a bid to build the GBA into an international innovation and technology centre.



Chapter 2:

Start-Up and Entrepreneur Characteristics





Chapter 2: Start-Up and Entrepreneur Characteristics

China's key national development strategy for the Greater Bay Area (GBA), leveraging the complementary advantages of the three places for co-ordinated development, looks set to generate new opportunities for start-ups in the region. This study explores the development trends of the start-up ecosystem in the GBA through a questionnaire and in-depth interviews with start-ups, and examines the characteristics of entrepreneurs and start-ups in the GBA. Survey findings show that entrepreneurs in the GBA are getting younger and better-educated. Many of them are from overseas or have studied abroad. More than 50% of the start-ups have more than one founder, a situation typically seen in the mainland cities.

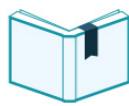
Young and well-educated

Thanks to the positive steps taken by the government to improve the start-up ecosystem and promote youth entrepreneurship through funding, infrastructure, talent support and other areas, entrepreneurs in the GBA are getting younger. Among the start-ups surveyed, most entrepreneurs (61%) are 31-40 years old. However, a significant proportion (20%) are aged 22-30. In terms of education, nearly all entrepreneurs (97%) are university graduates, with 21% and 10% respectively holding a master's degree or a PhD. From the survey, one can see that the GBA start-up ecosystem is full of young and well-educated talent.

GBA entrepreneurs: Young and well-educated



Age of founder:
31-40, 61%
22-30, 19.8%
41-50, 15.6%

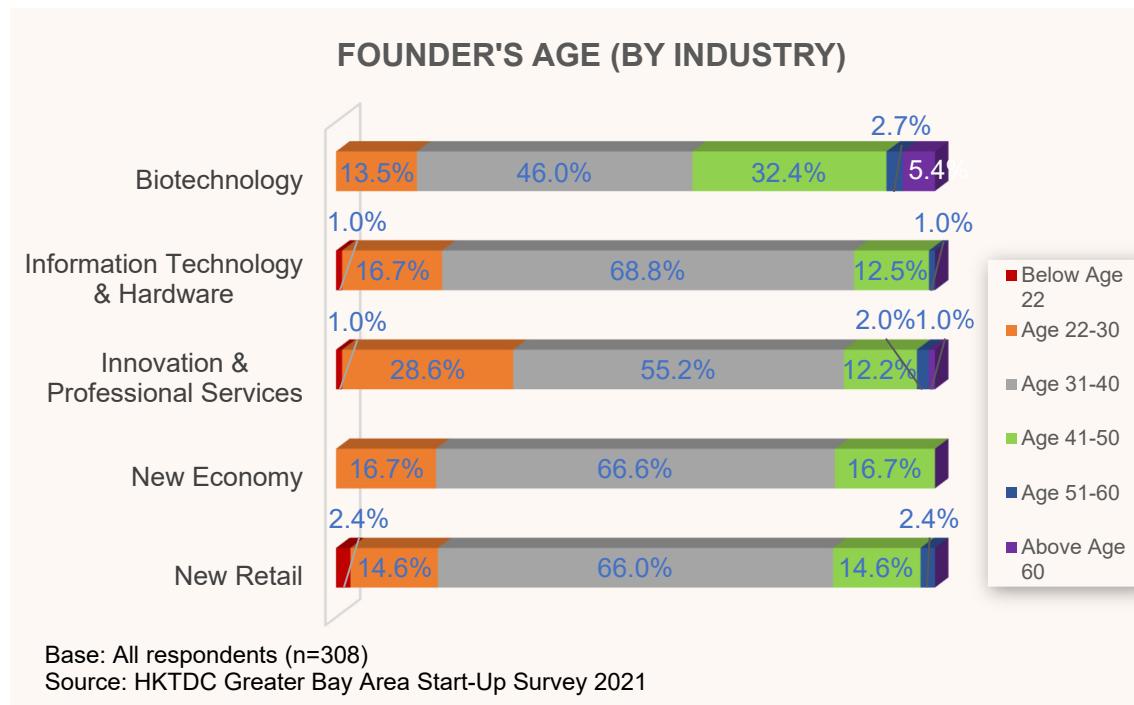


Education level of founder:
Bachelor's degree, 66.9%
Master's degree, 20.5%
PhD degree, 9.7%

Source: HKTDC Greater Bay Area Start-Up Survey 2021

The survey found correlations between the entrepreneurs' educational background and their work experience, age and field of business. Among the five industries surveyed, founders of biotechnology start-ups have the highest median age of 40. They also have the highest educational level, with 49% of founders holding either a master's degree or a PhD. Since biotechnology is a more academic field exploiting recent research and development (R&D) the start-up threshold is higher than in other industries. Entrepreneurs in this industry usually have considerable working experience and a solid foundation of relevant knowledge. Among young entrepreneurs between 22-30 years of age, nearly half (46%) are engaged in innovation and professional services such as design and marketing, or professional and consultancy

services. The start-up costs are lower in these sectors, making it easier for young people with limited funds to turn their professional skills into a business.

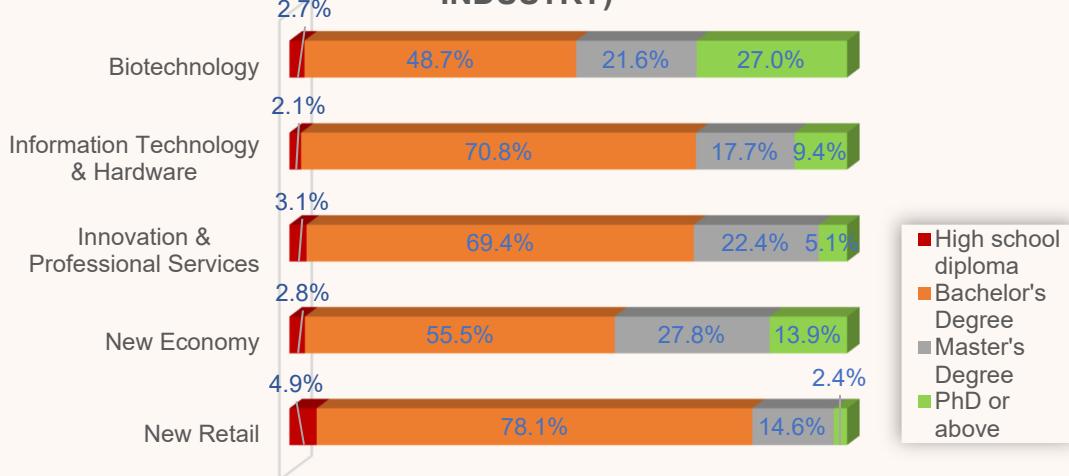


During the in-depth interviews, it was discovered that many of the entrepreneurs in the GBA had studied abroad and had dreamt of starting their business during their college days. For example, Li Chaoxing, founder of *Riemann Hypothesis Technology Co. Ltd.* [Case Study 1], returned to China to start his business through Shenzhen's *Peacock Plan* for high-level talent³ after finishing his PhD on molecular cell biology at the *Arizona State University/Mayo Clinic*. He was recruited by the renowned *Draper University*'s business incubator programme during his stay in the US and his visit to the Silicon Valley, the global start-up hub, paved the way for the fulfilment of his entrepreneurial dream.

³ Shenzhen launched the *Peacock Plan* in 2011 to encourage and support high-calibre talent to work and start business in the city.



FOUNDER'S EDUCATIONAL BACKGROUND (BY INDUSTRY)



Base: All respondents (n=308)

Source: HKTDC Greater Bay Area Start-Up Survey 2021



Case Study 1: Biopharma Incubation Platform

Interview with Li Chaoxing, Founder of Shenzhen Riemann-Hypothesis Technology Co. Ltd.

Li Chaoxing founded *Shenzhen Riemann-Hypothesis Technology Co. Ltd.*, a venture capital service firm specialising in the bioscience sector, in Shenzhen in August 2018. After obtaining his bachelor's degree in clinical medicine in China, Li attended *Arizona State University/Mayo Clinic* in the US and was awarded a doctorate in molecular cell biology. While studying in the US, he was admitted to a renowned business incubator programme run by *Draper University*. Li saw that biopharmaceuticals were developing rapidly and scientific research was making good progress in China, and calculated that the demand for capital from the biopharmaceutical sector was set to grow. He returned to China to start his business under Shenzhen's *Peacock Plan*, which aims to attract high-level talent from overseas. Li gave *HKTDC Research* his analysis of how the mainland's biopharmaceutical sector is set to develop and told us about his entrepreneurial experience in Shenzhen.

New growth in biopharmaceuticals

In recent years, research on biopharmaceuticals in China has advanced rapidly, with colleges and universities proactively converting research achievements into new products and services. While the *Covid-19* pandemic has dealt a blow to various industries, it has accelerated the growth of the biopharma market. This, coupled with the proposal in China's *14th Five-Year Plan* that innovation and technology should drive development, has created huge growth potential for the sector.

Li explained that this in turn boosted its demand for capital, saying: "2020 was seen as the boom year of biopharmaceuticals, with publicly listed pharmaceutical companies mushrooming and the capital market placing more emphasis on pharmaceutical projects such as the R&D of drugs and new vaccines."

To capitalise on the demand for diversified services during different development stages of biopharma enterprises, Li formed a team and built two platforms: a trading platform and an investment and incubation platform. Describing their different roles, Li said: "The trading platform mainly serves equity transactions and drug pipeline⁴ deals. Equity transactions refer to equity financing for early-stage biomedical industry players. Equity financing for biomedical projects presents great challenges because of the high risk and technical difficulty involved. Traditional investors tend to shy away from such investments. Given our backgrounds in biologics, we are well placed to connect project owners with potential investors. The drug pipeline platform mainly

⁴ Biopharmaceutical pipeline generally refers to the process from pre-clinical studies (concept), through clinical trials (phases 1, 2 and 3), to market launch.



serves small- to medium-sized biopharmaceutical businesses which possess sound innovative technology. However, since pre-clinical studies and clinical trials are massive projects requiring a huge amount of human and financial resources, some of these small- to medium-sized businesses have to transfer their technology to large pharmaceutical firms for further development.

“Platforms for early-stage biomedical project equity financing and drug pipeline platforms are new business models in China and work much like third-party business development (BD) platforms that require an extremely high level of professionalism and a large reserve of resources as well as a lot of overseas resources and personal connections. In this regard, we have done a lot of preparation work. Since biopharmaceutical projects generally involve enormous transaction amounts reaching over RMB100 million and the demand for transactions has been on the rise, we therefore built the financing platform and the pipeline platform to provide major income sources (one from financing and the other from trading pipelines) for biopharmaceutical players during different stages of development.

“Naturally, we have a longer-term plan, which is investing in seed rounds and business incubation in the next two years. In other words, we will invest in the incubation of early-stage biopharmaceutical projects. We hope to start investing in seed rounds and business incubation as soon as possible, we do not rule out the possibility of forming limited partnerships in the meantime.

“At present, there is no investment fund in China dedicated to seed rounds in biopharmaceuticals because the risks are too high and risk management is too difficult. Moreover, since the exit period for funds is normally seven to nine years after investment, most funds are not interested. So we are actually doing what others would not do. We believe the financing platform and pipeline trading platform built by us will serve as the lifeline for biopharmaceutical companies. By creating this lifeline and with the help of our risk control system, we can go ahead with seed round investments.”



Dr Li Chaoxing (right) interviewed by CCTV.



Funding differences

Pointing to the differences between China and the US in their investment in early-stage biopharmaceutical projects, Li said: "In China, many higher education institutions have set up innovation centres or incubators, but all investments in early-stage projects come from government funding. For instance, preliminary research on projects such as target validation, pathway validation, and micro-molecular design conducted in university laboratories normally uses the scientific research funding for the lab. It is basically impossible to acquire private capital at this stage because investors would inevitably ask for equity. Even if interested investors are found, the limited partners (LPs) of the fund would not agree. Another mode of funding is for the government to raise capital and bring in the technology required and under such circumstances the government may make the initial investment."

"In the US, early-stage development of biopharmaceutical technology mostly uses private equity funds and when a technology is still in the laboratory stage, private funds would have already poured in. But in China, as of now, both its technology and talent are not strong enough to convince investors that seed round projects will succeed, and funds are only willing to invest if a start-up project has recruited talent from famous universities abroad. In other words, projects with overseas resources are more likely to attract initial investment. Generally speaking, in China's biopharma sector, there are hardly any institutions engaged in seed round investment and business incubation. We are making great efforts to fill this gap. Since we participate actively and hold equity in every project, plus the fact that we are an investment institution with plenty of investor resources, it is not only easy for shareholders to sell private shares⁵, it is also easy for them to exit via other channels."

Explaining how investors judge the quality of biopharmaceutical projects, Li said: "First of all, it depends on whether the team is outstanding. Usually, team members are expected to have doctorate degrees or above, preferably PhD holders from the likes of *Harvard*, *Stanford* or *MIT*. Then it depends on the scope of the R&D. One example is membrane protein which still requires a lot of effort in development and the technical barriers are high. It also depends on whether the technology of the start-up company is mature enough, what risks are involved, whether the risk period has expired, and the availability of clinical trial data."

Many people feel that Hong Kong investors place more importance on short-term returns. Li believes that this is related to the characteristics of Hong Kong's industries, saying: "Hong Kong is known for its vibrant secondary market⁶, where investors can exit any time and there is great flexibility. These investors are used to doing short-term trading and are unlikely to invest their money in a project for six to seven years. But investing in biopharmaceuticals takes time."

⁵ Selling private shares means the public sale of shares by shareholders to investors in initial public offerings.

⁶ Secondary market refers to the capital market where the stocks of listed companies are traded.



Dr Li Chaoxing, a judge of the Shenzhen Innovation and Entrepreneurship International Competition.

Boosting management efficiency

At present, all six members of Li's financing team and industry research team are responsible for the investment and financing business. Explaining his hiring policy, Li said: "Our financing team also handles investment, so when we recruit talent we use the hiring standards of investment banks. Every team member is capable of managing the whole process of completing a deal independently."

Li added that he is currently building a staff management platform, saying: "We have to establish a project management system suited to the nature of the biopharmaceutical industry. Without sound management, a project can hardly progress well. That's why we have set up a staff KPI⁷ and customer management system. This is a huge system covering time management, meeting management, project progress management, and so on. In the past, the six of us managed 10 projects simultaneously. After the system becomes operational, we can expect to handle 30 projects efficiently and in an orderly way at the same time, and management should further improve. As the six of us are already working at our maximum capacity, steps must be taken to raise the efficiency of project management by improving the system."

Li is a high-calibre talent who returned to China to start a business under Shenzhen's *Peacock Plan*. Describing how he has found the environment for entrepreneurs in Shenzhen since his return, Li said: "Shenzhen offers subsidy policies to overseas returnees with a doctorate degree under the plan, whereby qualified returnees can enjoy preferential treatment with regard to residence, entry-exit, domicile, schooling for children, employment for their spouse, and medical insurance. All these provide basic protection and ease of mind to entrepreneurs when they are starting their business. In addition, various districts in Shenzhen also offer extra subsidies on a local basis, creating a highly friendly environment for technology personnel returning to the country to start a business."

⁷ KPI (Key Performance Index) is the most important indicator measuring how effectively a task is managed.



“Compared with cities which were first movers in the biopharmaceutical sector, such as Beijing, Shanghai, Suzhou and Chengdu, Shenzhen is a late starter. But in terms of innovation, Shenzhen has surpassed these cities in certain areas. There are some highly innovative enterprises which are found only in Shenzhen but not in Beijing or Shanghai. We have many friends from Beijing and Shanghai who came to Shenzhen to start a business because the local government, investment institutions and industrial sector in Shenzhen value each and every entrepreneur. Compared with Beijing and Shanghai, it is obvious that Shenzhen attaches the greatest importance to talent.

“Besides, since there is already an ample supply of talent in Beijing and Shanghai, starting a business in these cities does not have as many advantages as it does in Shenzhen. In the last few years, Shenzhen has been actively attracting talent and has created an excellent entrepreneurial environment. The various subsidies offered by the local government to entrepreneurs are really a kind of soft advantage.”

There are many factors contributing to the success of entrepreneurship, such as entrepreneurial culture, entrepreneurial environment and entrepreneurial spirit. But Li pointed out that government support is also very important, saying: “I am a director of the *Shenzhen Pingshan District Overseas Chinese Returnees Association*. Tao Yongxin, the former Pingshan district party secretary, used to join our activities and show his genuine support by staying from the beginning to the end of the events as well as exchanging views with us on an equal footing.

“Now a vice mayor of the Shenzhen municipal government, he still cares a lot about the development of Pingshan district. At the first anniversary of the *Pingshan District Overseas Chinese Returnees Association*, Tao attended the celebration event and listened to our ideas and suggestions so that he could co-ordinate various government departments in Shenzhen to give us help. Shenzhen’s greatest advantage is that the city’s policies are very pro-business.”

Synergy with Hong Kong

Discussing Hong Kong’s start-up ecosystem, Li said that the dominance of the financial sector as Hong Kong’s economic pillar and the acute shortage of land have stifled the diversified development of industry. Li argued that, because of this, Hong Kong should seek closer integration with Shenzhen to achieve synergised development and complementariness, saying: “Where biopharmaceuticals are concerned, the academic research conducted by the *University of Hong Kong* and *Chinese University of Hong Kong* is impressive. At the same time, several universities in Hong Kong have set up satellite campuses in Shenzhen, as well as started co-operation in the medical field. Examples include the *HKU Shenzhen Institute of Research and Innovation*, the *Chinese University of Hong Kong (Shenzhen)*, the *Hong Kong Baptist University Shenzhen Research Institute*, and the *University of Hong Kong-Shenzhen Hospital*.

“Shenzhen and Hong Kong could co-operate under the division of labour mode, with Shenzhen devoting its efforts to developing a complete industry chain linking technology, finance and manufacturing, while Hong Kong focuses on areas such as



international finance, education, scientific research and culture. Look at Singapore - although it is a small country, the development of the biopharmaceutical industry is distinguished because the scientific research of its universities is outstanding and many industry players have set up their headquarters there while industrialisation is carried out in the US and Europe.

"Hong Kong can capitalise on the GBA mainland cities to develop industries other than finance, just as Macao capitalises on Hengqin in Zhuhai to adopt the 'remote incubation' mode, whereby Hong Kong-registered companies can operate in Shenzhen. Doing this would mean that Hong Kong could leverage its advantage in raising funds to drive the development of other industries."

Pointing out, however, that there are some hurdles in the path of closer Shenzhen-Hong Kong integration, Li said: "When mainland entrepreneurs visit Hong Kong, they are required to apply for an entry permit, which is an invisible barrier restricting their freedom of movement. Also, in the biopharma sector, since the rules and regulations in Hong Kong and the mainland are different, application procedures have to be completed separately, which means it takes more time and is more expensive."

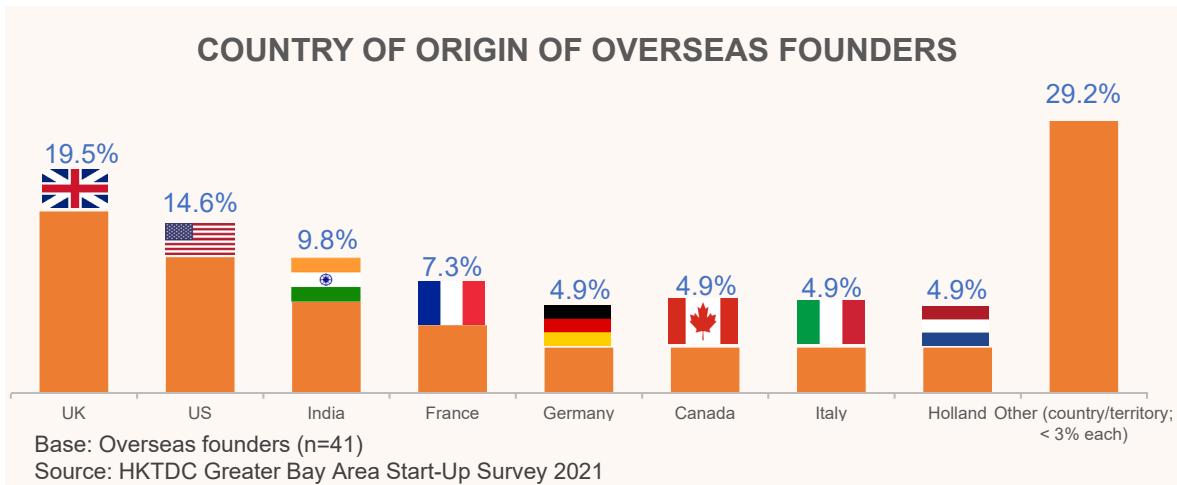
Li also complained that, compared with Shenzhen, the entrepreneurial environment in Hong Kong is less vigorous, saying: "Hong Kong has a large pool of talent, but not all have the entrepreneurial spirit. Even though the scientific research of Hong Kong universities is remarkable, commercialising technology requires a strong entrepreneurial spirit. While this innovation and entrepreneurial culture in the mainland is flourishing, it is rather lacklustre in Hong Kong."

The *14th Five-Year Plan* says that support will be given to develop Hong Kong into an international innovation and technology centre. The Hong Kong Chief Executive's *2021 Policy Address* also sets out that the government will reserve several plots of land for the development of innovation and technology. For instance, the Lok Ma Chau Loop, the *Hong Kong-Shenzhen Innovation and Technology Park*, and areas around Lok Ma Chau/San Tin are to be consolidated to form the *San Tin Technopole*, with an estimated 240 hectares of land devoted to the development of innovation and technology. The *San Tin Technopole*, together with the *Shenzhen Innovation and Technology Park*, will form the *Shenzhen-Hong Kong Innovation and Technology Co-operation Zone*, covering an area of about 540 hectares. This co-operation zone is designed to pool the strengths of Shenzhen and Hong Kong as well as gather together overseas and mainland talent to serve as the engine driving the construction of an international innovation and technology centre in the GBA. The hope is that in the near future Shenzhen and Hong Kong will have greater room for integration in the development of innovation and technology.



Overseas founders

As one of China's most open and international regions, the GBA attracts outstanding entrepreneurs from abroad thanks to its vast development prospects. In the present survey, 13% of entrepreneurs in the GBA are from overseas, mostly the UK and the US. Among them, 66% have their headquarters in Hong Kong, 7% are based in Shenzhen, while the rest have headquarters in mainland cities outside the GBA and offices in the GBA. Many overseas entrepreneurs were initially posted to the GBA by the companies they worked for, which gave them an opportunity to learn about local industries. They saw the potential in the GBA market and its supporting facilities, and waited for the right time to start their own businesses. Koc Gokhan (Kang Han) from Turkey saw the need for industrial internet-of-things (IoT) applications in Shenzhen's global manufacturing hub during an overseas assignment to the city and decided to stay behind to start his own business. He established *Kstar-AI* [Case Study 3] in Shenzhen to provide IoT solutions to industrial manufacturers. Raj from the San Francisco Bay Area was an entrepreneur working in the Silicon Valley. In 2019, he visited Shenzhen for his client *Gupshup* and was amazed by the huge business opportunities in the GBA. In 2021 he set up his own company in Shekou's Net Valley. His new company, named *Interface Technology (Shenzhen) Co. Ltd.* [Case Study 2], specialises in the provision of technology solutions to the GBA market and other parts of China.





Case Study 2: From San Francisco Bay Area to China's Silicon Valley

Interview with Raj Oswal, Founder of Interface Technology (Shenzhen) Company & O'Interface, USA

In April 2019, Raj Oswal came to Shenzhen on behalf of his client, a Silicon Valley, AI based Messaging company called Gupshup, looking to integrate their software with Chinese Smartphone makers like Xiaomi. He is a Silicon Valley based entrepreneur from the San Francisco Bay Area with 25 years' experience in go to market initiatives for disruptive technology⁸. Seeing the huge business opportunities in the GBA, Raj recently went on to set up his own Chinese company focused on being a technology solution provider for the GBA and Mainland China market– Interface Technology (Shenzhen) CO. – in Shekou, Net Valley in 2021. While he continues to represent the San Francisco company client Gupshup to provide new solutions such as AI Conversational Chatbots, he also has an eye on education technology for the future. In one such example, Raj shares below how AR and VR content can enhance the online learning experience and how he perceives the GBA start-up ecosystem from his own experience.

Making Education Immersive

Due to COVID-19, many classes have moved online and e-learning has become the new normal. However, many studies show that online classes are not always engaging, there can be distractions online and overall retention is low. Raj said: “We are exploring how to solve this problem through engaging experiences using virtual reality (VR) and augmented reality (AR) content, which is called Kinesthetic learning. That is, you learn through interaction and experience which involves seeing, doing and hearing. Currently, we like interactive content through VR, for subjects in education.”. According to Raj, virtual Kinesthetic learners show significantly higher retention rates leading to improved critical thinking after just a week of exposure.

With his new company, aside from representing the AI messaging solution, he is teaming up with a tech-education colleague in Shenzhen. Their aim is to explore and potentially design interactive content material for the international education market. “We would like to form a thriving community of passionate

⁸ Professor Clayton M. Christensen at Harvard Business School invented the term “disruptive technology”. Disruptive technology is technology that affects the normal operation of a market or an industry, displacing a well-established product or technology to create a new industry or market.

tech educators to provide experiential curriculum, content and other disruptive innovations for education,” added Raj.



Student learning via VR.

Inspired by Successful Tech Giants in Shenzhen

Coming from the San Francisco Bay Area, Raj finds Shenzhen full of opportunities for innovation and technology development. He points to the many famous tech giants such as Tencent, Huawei, DJI and ZTE that have developed there. Raj said: “Silicon Valley has been innovating for decades, but to see what Shenzhen has achieved in such a short period of time is amazing.” Raj believes Shenzhen is unique on the mainland, an emerging powerhouse filled with young talent and blessed with good infrastructure to support technological innovation in areas such as Artificial Intelligence (AI), internet of things (IoT), and Smart Robotics.

Seeking Funding Support

For new start-ups in Shenzhen, Raj suggests to take part in start-up competitions. He said: “These are the fastest and easiest way to reach out and pitch to potential investors. There is a lot of funding available in Shenzhen from both government and the private sector. I think it is important to be sure that the investor’s goals are in line with our company’s ideas.

Recipe for Success

Before becoming a start-up founder, Raj had several early years working experience with early stage start-ups in Silicon Valley, California. He believes there is no structured way to success. “Many start-up concepts are based on modifying or adapting existing products and services, but start-ups also need to be dynamic in responding to customers’ needs and be creative in providing solutions.” He continued: “Sometimes the products or services of these start-ups are not yet mature, but nevertheless some of these young entrepreneurs aggressively expand and diversify their products and services. They should stay



focused on a signature product or service, then roll out others step by step. It is the same approach as expanding the market for your product, it is best to build a strong base in a familiar market first, then tap into other markets".

Some young entrepreneurs, Raj observed, are used to working in large corporations which have well defined workflow, clear division of labor, and readily available resources. When they start up their own businesses, they have unrealistic expectations. Raj said: "These young entrepreneurs can seek advice from accelerators and incubators. There are many resources available for start-ups, but you have to reach out."

What factors are important to the success of a start-up? Raj said: "I think human capital is the most crucial factor. You have to have a good team to implement your idea. Secondly, you must be innovative, visionary and believe in yourself. Finally, funding is, of course, essential."

Creating synergy in GBA

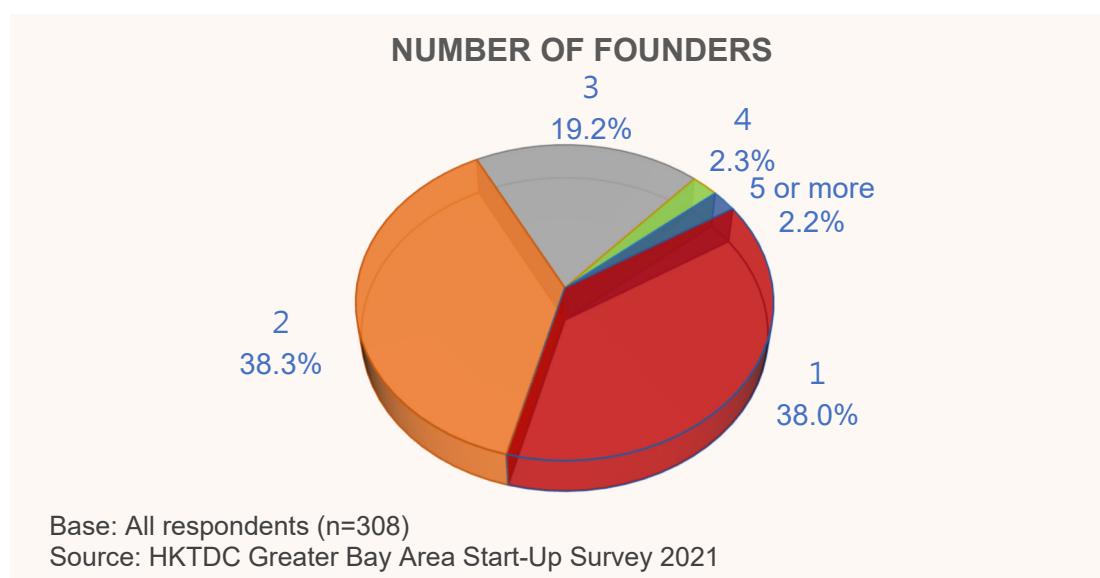
Shenzhen is not only the world's manufacturing hub but also China's very own Silicon Valley. The 14th Five-Year Plan steadily progresses the development of the Guangdong-Hong Kong-Macao GBA, to safeguard its future growth. Shenzhen has a complete manufacturing supply chain, which helps start-ups to take their ideas from concept to product. Talking about GBA, Raj said: "At some point, start-ups will want to expand their markets beyond the mainland, and they can reach overseas markets efficiently using Hong Kong as a launch platform."

Hong Kong is the most international city in the GBA, and it is known as a globally important financial, transportation, and trade centre and a regional aviation hub. Its professional services are also internationally renowned. Raj however sees room for improvement: "I think the Hong Kong Government should continue to invest more in university research and education. Ultimately, a lot of innovation comes from good university research. Accelerators and government institutions should be working closely with Hong Kong's universities, looking for opportunities for technology transfer and innovation. After all, Stanford, UC Berkeley, UCLA and other universities are what makes San Francisco's Silicon Valley so great."

Raj shares his vision with us: "You always have to be ahead of the curve, and it is very important for an entrepreneur to have a vision past five years. For me, I think immersive technology like VR could be the next big thing in the market, given the momentum and timing of global tech giants like Facebook, Microsoft, ByteDance and others backing the movement. All in all, start-ups need to understand the dynamics of the market and provide timely solutions to grasp the latest opportunities."

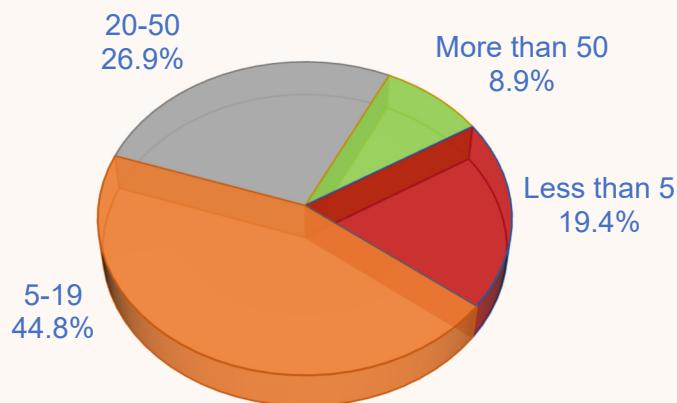
Multiple co-founders

Entrepreneurs often face this problem in the early stage of their business: They have preliminary ideas and basic know-how but do not have sufficient funds, knowledge and skills to translate ideas into reality. Many of them look for co-founders with complementary skill sets to form effective teams to drive business growth and achieve targets early. Many global giants such as *Apple* and *Tencent* have multiple co-founders. Among the GBA start-ups surveyed, over 60% have two or more founders. This is very common on the mainland, with 86% of respondents in the nine GBA mainland cities formed in this way.



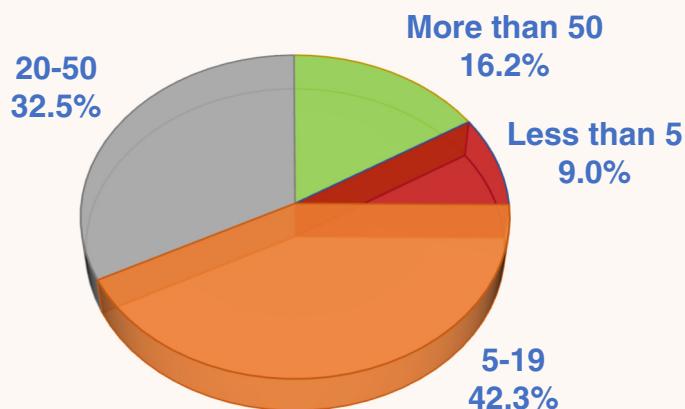
Among those start-up companies established within six years that employ more than 50 people, around 80% have two or more co-founders. Moreover, all start-ups that successfully went public within six years have co-founders. This shows that suitable co-founders can bring a start-up business the resources and connections needed and produce ‘strong-strong’ effects that help speed up its development. This is an important factor for successful start-ups.

NUMBER OF EMPLOYEES (START-UPS ESTABLISHED FOR LESS THAN 3 YEARS)



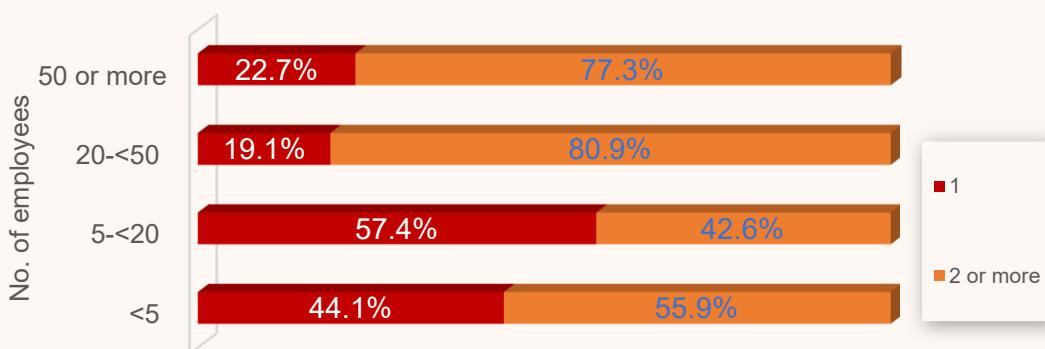
Base: Valid responses from start-ups established for less than 3 years (n=68)
Source: HKTDC Greater Bay Area Start-Up Survey 2021

NUMBER OF EMPLOYEES (START-UPS ESTABLISHED FOR 3 YEARS OR MORE)



Base: Valid responses from start-ups established for 3 years or more (n=240)
Source: HKTDC Greater Bay Area Start-Up Survey 2021

NUMBER OF FOUNDERS AND COMPANY SIZE

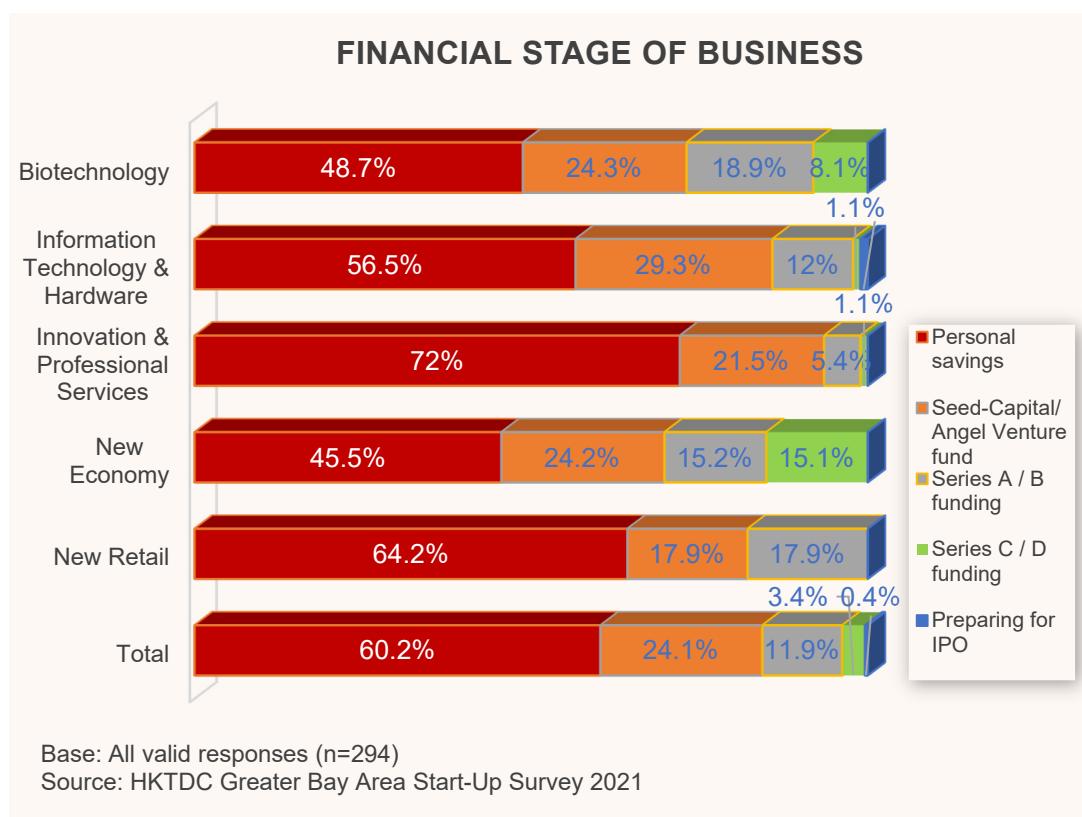


Base: All valid responses (n=301)
Source: HKTDC Greater Bay Area Start-Up Survey 2021



Personal savings top funding source

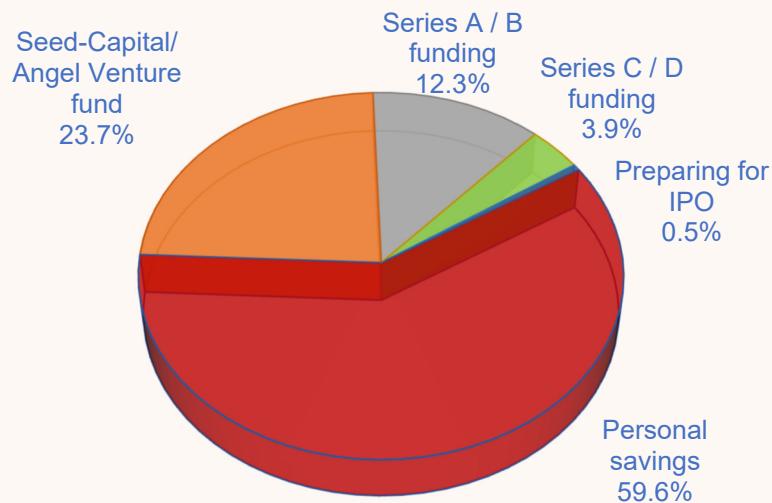
Many start-up companies (60%) surveyed rely on personal savings for start-up funds and working capital while 24% are still in the angel/seed round. Meanwhile, there are start-ups who have successfully gone public or are in the pre-public stage within six years of establishment. These are mainly found in the information technology and hardware, and innovation and professional services industries.





The survey also found that financing for start-ups did not improve with length of business. Among all start-ups established for three years or more, 60% still rely on personal savings for their working capital while 24% are still in the seed/angel round. This suggests that financing is a major challenge for start-ups in the GBA.

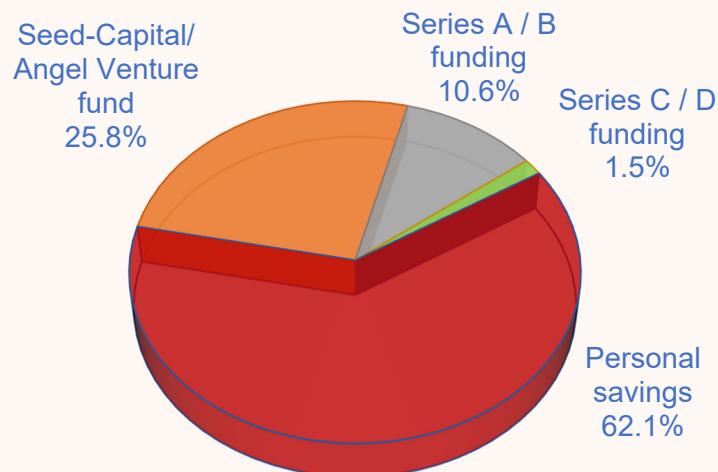
FINANCIAL STAGE OF BUSINESS (START-UPS ESTABLISHED FOR 3 YEARS OR MORE)



Base: Start-ups established for 3 years or more (n=228)

Source: HKTDC Greater Bay Area Start-Up Survey 2021

FINANCIAL STAGE OF BUSINESS (START-UPS ESTABLISHED FOR LESS THAN 3 YEARS)



Base: Start-ups established for less than 3 years (n=66)

Source: HKTDC Greater Bay Area Start-Up Survey 2021



Chapter 3:

Ecosystem Strengths and Weaknesses





Chapter 3: Ecosystem Strengths and Weaknesses

In the questionnaire survey, start-ups in the Greater Bay Area (GBA) were asked to rate the city where their headquarters was established on a 10-point scale, where 1 represents very dissatisfied and 10 represents very satisfied. The survey results show that Shenzhen ranks first in terms of respondents' level of satisfaction towards the overall start-up ecosystem (rated at 7.94), followed by Hong Kong (rated at 7.59).

	Hong Kong	Guangzhou	Shenzhen	Other GBA cities
Overall Start-up Ecosystem	7.59	7.19	7.94	7.50

Note: 1 = very dissatisfied, 10 = very satisfied

In order to assess the performance of GBA's major cities (Hong Kong, Guangdong and Shenzhen) and identify their respective strengths and weaknesses, respondents were asked to rate these cities on a 10-point scale in supporting four aspects of start-up development, namely "R&D environment", "business environment", "funding availability" and "entrepreneurial support", where 1 represents very dissatisfied and 10 represents very satisfied.

1. Strengths and Weaknesses of Shenzhen's Start-up Ecosystem

R&D Environment

A good research and development (R&D) environment not only inspires R&D personnel's creative thinking and fosters innovative research, but also facilitates technological advancement and promotes social efficiency and progress. The survey found that Shenzhen respondents were generally satisfied with the city's overall R&D environment (rated at 7.40), and were particularly satisfied with the local R&D facilities (rated at 7.61).



SHENZHEN: R&D ENVIRONMENT



Note: Respondents rated the city where their start-up was headquartered on a 10-point scale, where 1 represents very dissatisfied, and 10 represents very satisfied.

Base: All Shenzhen-headquartered start-ups surveyed (n=52)

Source: HKTDC Greater Bay Area Start-Up Survey 2021

In recent years, Shenzhen has made vigorous efforts to build key state laboratories and large-scale scientific facilities. With the commissioning of the National Supercomputing Center in Shenzhen, the Daya Bay Reactor Neutrino Experiment, the China National GeneBank and Peng Cheng Laboratory, greater infrastructure support is being given to Shenzhen's technology enterprises and start-ups. According to data from the Shenzhen Bao'An District People's Government, Shenzhen is now home to 2,693 innovation platforms (of which 129 are national-level innovation platforms) including key laboratories at the national, provincial and municipal levels, engineering laboratories, engineering centres and technology centres. In 2019, Shenzhen's R&D expenditure topped RMB132.8 billion. The city has many admirable achievements in scientific research and innovation, and is poised to become a key R&D base in the GBA.

It is noteworthy that while Shenzhen's rating of 7.57 in "R&D talent availability" shows that R&D talents are readily available, the city's performance in "human resources costs" (rated at 6.84) is less satisfactory. Moreover, the upward trend in R&D personnel's salaries is putting a heavy burden on many entrepreneurs who start a business on their personal savings. In an in-depth interview, Gökhan (Han) [Case Study 3] from Turkey said: "The wages of software engineers in Shenzhen have been escalating in recent years. The monthly salary for a mid-level software engineer in Shenzhen has already hit RMB20,000, while it is four times cheaper in Turkey. To save costs, we decided to keep the core management and sales in Shenzhen and base engineering support in Turkey."



Case Study 3: Foreign Entrepreneur Attracted by Market Potential and Manufacturing Support in Shenzhen

Interview with Gokhan, Founder of Kstar-AI

Industry 4.0 is the roadmap for the digital transformation of business. It is revolutionising the way companies manufacture, improve and distribute their products. It sees manufacturers adopting Industrial Internet-of-things (IIoT) devices and technologies to cope with the growing market for flexible, automated and networked manufacturing. Witnessing the rising demand in this area, Gokhan, who came originally from Turkey, established an IIoT solution company called Kstar-AI in Shenzhen, a city in mainland China which is renowned as a global manufacturing hub. As a start-up founder, Gokhan shared his journey in Shenzhen and his business goals with us.

From Data to Value

Established in 2017 and headquartered in Shenzhen, Kstar-AI focuses on building IIoT hardware and software platforms that enable manufacturing companies to go from sensor to local cloud and beyond. “The IIoT itself is not an end, but the insights and additional business value derived from the data are. We offer components and solutions for data acquisition, data pre-processing, data communication and data analysis to help companies adopt new technologies and simplify complicated issues that arise during technology evolution,” said Gokhan.

Gokhan shared one of the Kstar-AI hardware devices with us. “Our IIoT devices, the Kstar-AI industrial Edge Box 1000 series, not only support Amazon AWS, Azure, Ali Cloud, and Huawei Cloudy, but also private networks which allow users to build their own local cloud. If a user chooses to develop a customised local cloud, they no longer need to pay subscription fees for data to other platforms,” said Gokhan. The Edge Box 1000 series comes with HDMI web browser output which can display the dedicated local cloud platforms of users. With keyboard and mouse, users can control their own local cloud platform without a computer.

In addition to the hardware devices, Kstar-AI provides software solutions for clients. Gokhan said: “Currently, we are developing a sustainable cloud with AI for a water and energy group. Indeed, we have built over 100 software platforms for industrial edge computing.”

Start-up Journey in Shenzhen

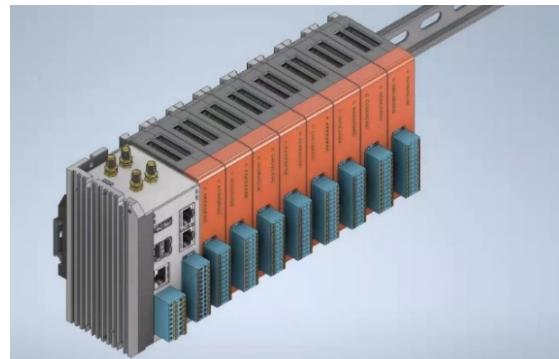
Gokhan, who is originally from Turkey, is the sole founder of Kstar-AI. After completing his university degree in the United Kingdom, he came to the mainland for a job as a hardware and software engineer. Gokhan said: “At the beginning, I came to Shenzhen only to complete a project, but then I found that there was huge



potential in the IIoT market in Shenzhen, as a global manufacturing hub. I decided to stay in Shenzhen and I have been living here now for about seven years."

Gokhan explains what he sees in Shenzhen: "In line with government initiatives on re-industrialisation, more and more manufacturers want to upgrade and enhance their factories through advanced technologies. Shenzhen, as a global manufacturing hub, has an escalating demand for technologies like IIoT and artificial intelligence (AI). Since developing tailor-made IIoT solutions often requires us to visit the client's factory in person, setting up a headquarter in Shenzhen, where most of our clients are located, is the best option for us."

Currently, Kstar-AI has two people in their Shenzhen headquarter who are dedicated to company management and product development, and a team of six software engineers in Turkey responsible for R&D. Gokhan explained the reasons for this arrangement: "The wages of software engineers in Shenzhen have been escalating in recent years. The monthly salary for a mid-level software engineer in Shenzhen has already hit RMB20,000, while it is four times cheaper in Turkey. To save costs, we decided to keep the core management and sales in Shenzhen and base engineering support in Turkey." As a start-up, Kstar-AI has experienced remarkable growth over the past three years, developing seven products and completing more than 25 projects.



IIoT hardware.

Shenzhen's Strengths in Advanced Manufacturing

Besides the business opportunities, Gokhan is amazed by the quick turnaround for building prototypes in Shenzhen. "We can easily find suitable manufacturers in Shenzhen who can develop our hardware products rapidly and effectively. For example, it only took us three months to produce our edge computers, completing the whole process from design to prototype production. If we had done this in Turkey, it would probably have taken us a year," said Gokhan.

Gokhan is very positive about Shenzhen's start-ups community and support. "I have built up connections with all kinds of engineers in Shenzhen and they helped me a lot when I started my company. Shenzhen government also offers many policies to support start-ups which I have found very useful. For example, start-ups can enjoy rent subsidies or tax deductions."

Register as a WFOE

Despite his overall success, Gokhan has faced several key challenges as a foreign businessman in Shenzhen. "We registered as a wholly foreign-owned enterprise (WFOE), which is a particular form of Chinese limited liability company. The registration process was very complicated, with a lot of paperwork. However, these application forms are only available in Chinese, and so we had no choice but to pay



a Chinese agent to act as our representative". Gokhan suggests the Shenzhen government should set up a dedicated counter for handling enquiries about company registrations, so that foreign start-ups can have options other than hiring an agent.

Gokhan continues, "even with our WFOE status, I get frustrated with banking issues. As a self-funded start-up, I may need to inject funds into the business account from my personal savings account. However, such transfers have been refused because of my foreign identity. Similarly, it is difficult to transfer money internationally."

Hong Kong: An Ideal Platform for "Going Out"

Gokhan has visited Hong Kong several times and he thinks that Hong Kong is a prime location to set up an office. "Currently, most of our clients are on the mainland, but if we are going to expand overseas, having an office in Hong Kong would be a definite advantage. Firstly, Hong Kong is an ideal location for holding face to face meetings with overseas clients because most overseas visitors do not need to apply for a visa to visit Hong Kong. Secondly, Hong Kong is just next door to Shenzhen. With the Hong Kong-Zhuhai Macao Bridge and the Guangzhou-Shenzhen-Hong Kong Express Rail Link, we can travel between two cities in no time."

Thirdly, Hong Kong is an international financial hub with free flow of capital, which Gokhan agrees is important for his future business expansion. Gokhan said: "Our products are getting more attention from investment companies in Hong Kong and the United States. I believe that we will make use of Hong Kong banking services to settle international bank payments in the future."

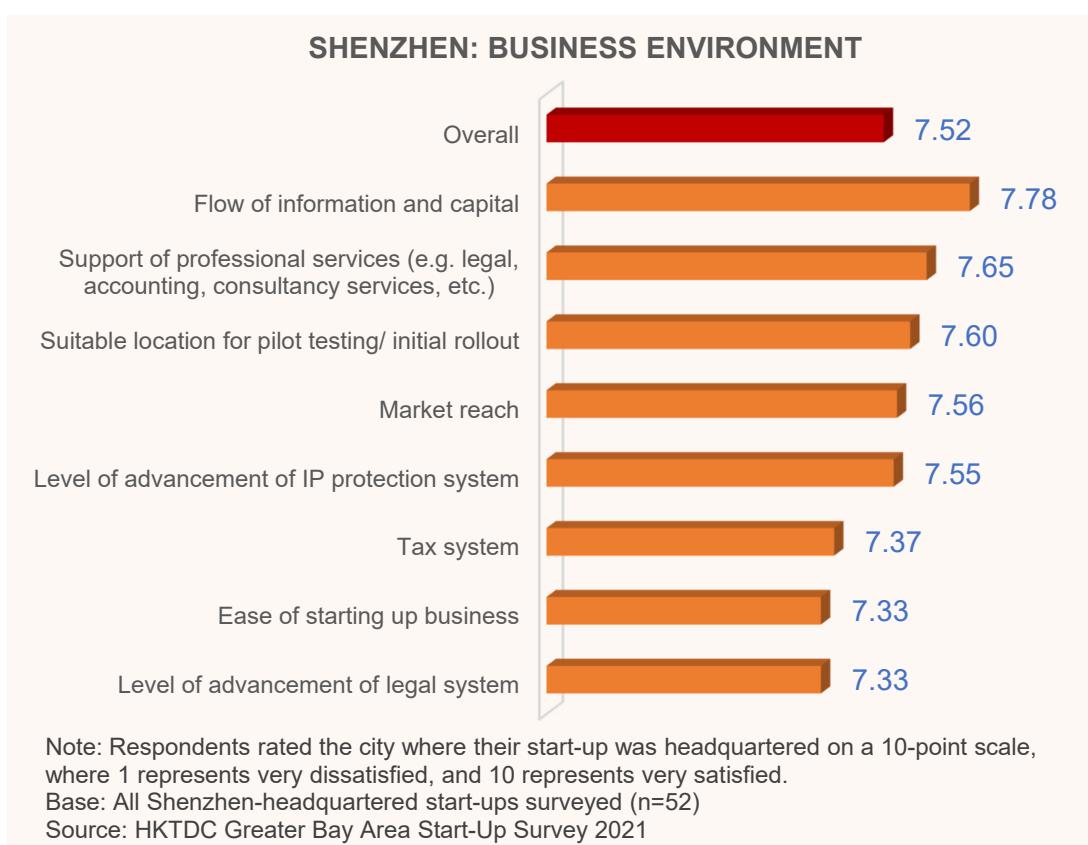
When it comes to strengthening Hong Kong as a start-up platform, Gokhan as a foreign start-up founder suggests: "The Hong Kong government could set up both online and physical information centres to provide support on policies and subsidies, business tools and advisory services, so that it will be easier for foreigners to establish companies in Hong Kong. Also, office rents in Hong Kong are unaffordable for most start-ups, so rent subsidies would be helpful for us too."

Since industrial digital transformation is still at an early stage, Gokhan is optimistic about his company growth. Looking ahead, Kstar-AI has an eye on the Southeast Asian market. "In recent years, Southeast Asia has been developing rapidly, and more and more manufacturing plants have relocated to the region, so we see huge opportunities there," said Gokhan. Looking in another direction, Gokhan has plans to set up another R&D centre in Pakistan or India where the wages of software engineers are even more competitive.



Business Environment

Shenzhen's excellent business environment has attracted a number of start-ups to the city. In the survey, Shenzhen is rated 7.52 in the "overall business environment", indicating that respondents in general were satisfied with the local business environment. With respect to "flow of information and capital" (rated at 7.78) in particular, respondents opined that Shenzhen's information and capital could flow freely and quickly within the country. The development of the GBA is expected to further enhance the flow of information in the region and help Shenzhen enterprises to leverage Hong Kong's international institutions and reach out to the world.



Respondents had a high opinion on Shenzhen's professional services (e.g. legal, accounting and consultancy services, etc.) which were rated at 7.65, showing that the city's service providers have generally gained good recognition among respondents for their service level and efficiency. Furthermore, many respondents felt that Shenzhen was a "suitable location for pilot testing or initial rollout" (rated at 7.60). For technology start-ups, the young and the middle-aged are often target customers as they are more tech-savvy, more interested in technology, and find using novel technology products easier. As one of the youngest mainland cities, Shenzhen's demographics allow start-ups to collect a large amount of useful data to better

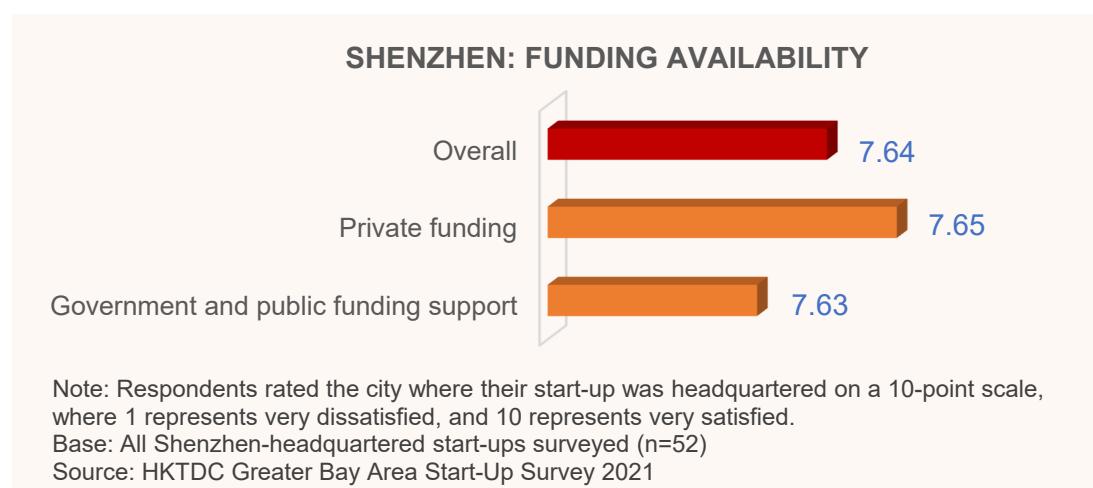


understand the consumption and spending patterns of their target customers and to make decisions on market expansion accordingly.

However, Shenzhen start-ups surveyed said that there was still room for improvement in the city's "level of advancement of the legal system" (rated at 7.33). During the in-depth interviews, while respondents indicated general satisfaction with the local legal system, some noted that the local government has been slow and conservative in legislating on innovative technologies, so that there are constraints on start-ups trying to innovate their business models and services. They hoped that laws and regulations could advance in line with the latest technological developments.

Funding Availability

Respondents were satisfied with the funding availability in Shenzhen, which scored good ratings both in "government and public funding support" (7.63) and "private funding" (7.65).



During an in-depth interview, Raj Oswal, the founder of Interface Technology (Shenzhen) and O'Interface of the US [Case Study 2], said: "Large amounts of public and private funding are available in Shenzhen." One start-up founder in Shenzhen pointed out that the Shenzhen government's start-up subsidy is offsetting some of their expenses in office rentals, insurance and salaries. Moreover, the Shenzhen government will give extra support to particularly promising projects, and offers additional subsidies to outstanding talents. Dr Li Chaoxing, the founder of Shenzhen Riemann-hypothesis Technology [Case Study 1], said: "Shenzhen's Peacock Plan grants subsidies to overseas returnees with a PhD degree. Eligible candidates enjoy preferential treatment for residence permits, immigration, children's education, spouse employment, healthcare and medical insurance. This will ensure that their basic needs



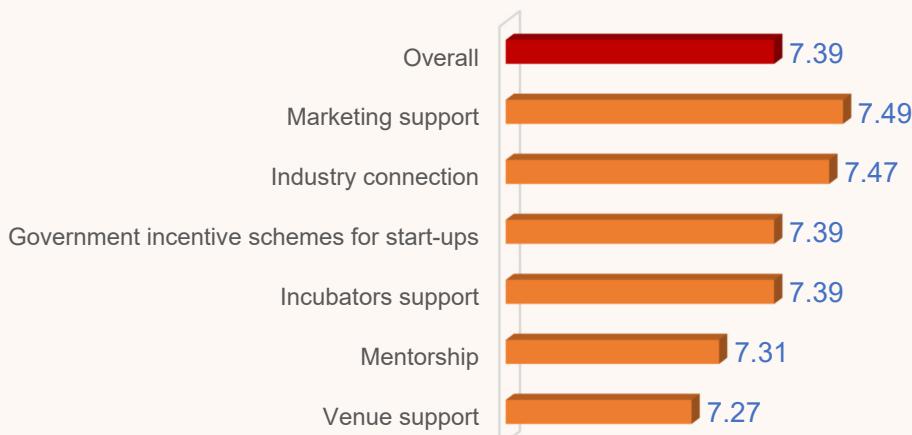
are covered and they do not have family worries when starting up their business in Shenzhen. With additional benefits thrown in by individual districts in Shenzhen, the city is really friendly to technology talents returning to start their business."

Some start-ups said they had chosen to set up their headquarters in Shenzhen because of the vibrancy of the city's start-up community and the plentiful supply of venture capital. The presence of leading venture capital institutions in Shenzhen, such as Shenzhen Capital Group, CoStone Capital, IDG Capital, Oriental Fortune Capital and others, offers abundant financing opportunities to start-ups.

Entrepreneurial Support

Shenzhen also performed decently in "overall entrepreneurial support" (rated at 7.39). In in-depth interviews, quite a number of respondents said Shenzhen was a good place to carry out marketing (rated at 7.49). He Chang, the founder of Guangzhou Jiale Information Technology [Case Study 4], said: "We set up our publicity team in Shenzhen because there are more KOLs and marketing talents there. We also established an office in Shenzhen mainly to take care of new-media related business."

SHENZHEN: ENTREPRENEURIAL SUPPORT



Note: Respondents rate from 1 to 10 over the location of headquarters. 1 represents very unsatisfied, 10 represents very satisfied.

Base: Startup companies which set up headquarters in Shenzhen (n=52)

Source: HKTDC Greater Bay Area Start-Up Survey 2021

Start-ups in Shenzhen spoke highly of the city's rich entrepreneurial culture and close industry connections (rated at 7.47). Start-up bases and incubators regularly organise networking activities to bring together teams from different industries and backgrounds, and create opportunities to meet the stakeholders of their respective industries. For example, many start-ups from Hong Kong, Macao and the mainland have set up shop in the Shenzhen-Hong Kong Youth Innovation Entrepreneurship Base in Nanshan



Park in Shenzhen. The base runs activities to enable young entrepreneurs from both sides of the border to exchange views directly. This will help them match up with each other and explore business opportunities.

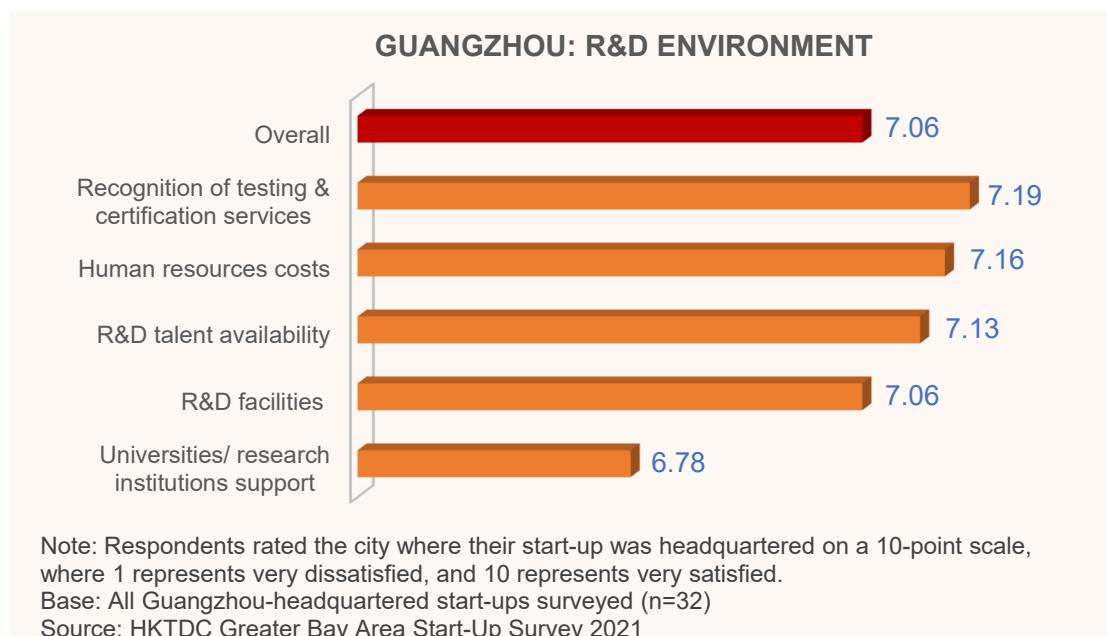
Though there are many incubators and industrial parks in Shenzhen supporting the development of start-ups, some entrepreneurs wish that public services in Shenzhen could meet the individual requirements of different enterprises. In an in-depth interview, one respondent said: "Shenzhen has a host of good start-up support policies, but most of these policies are not specific enough. Some companies need more individual support, but only the larger ones have strong enough negotiating power to get this."



2. Strengths and Weaknesses of Guangzhou's Start-up Ecosystem

R&D Environment

The survey discovered that Guangzhou respondents in general were satisfied with the “overall R&D environment” locally (rated at 7.06), and were satisfied in particular with the level of “recognition of testing & certification services” (rated at 7.19).



Guangzhou boasts a number of national-level inspection and testing institutions providing start-ups with quality and quick testing services. An example is the Guangzhou Inspection Testing and Certification Group which has developed its own information systems. One-stop bespoke testing solutions are offered to clients, who can receive product testing information and reports via the enterprises' own intranet. Many certification bodies for quality products are also operating in Guangzhou, offering certification services for high-end goods like smart home appliances, high-definition digital TV and fintech products.

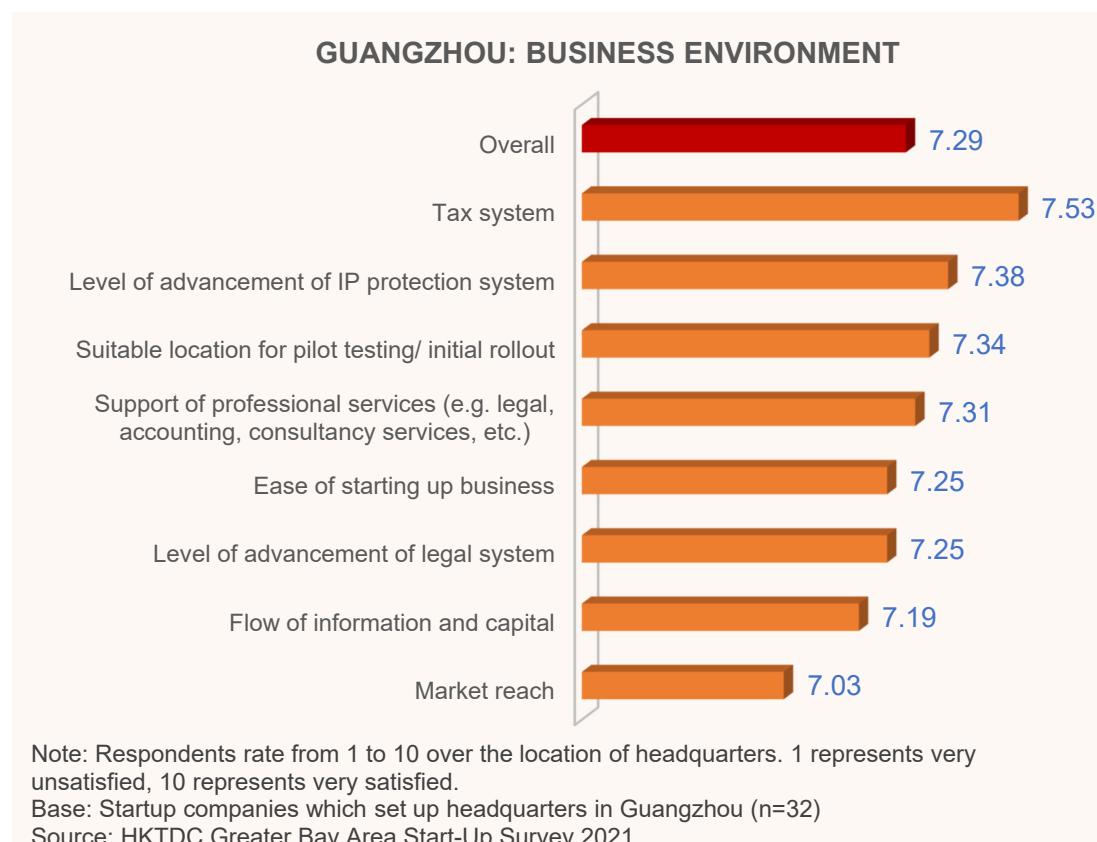
However, Guangzhou has performed less satisfactorily in “universities/research institutions support” (rated at 6.78). According to the Statistics Bureau of Guangdong Province, Guangzhou expended RMB67.8 billion in R&D in 2019, which is only half the amount invested in Shenzhen (RMB132.8 billion), indicating a less vibrant R&D culture when compared to Shenzhen.

Business Environment

The survey results show that respondents were generally satisfied with Guangzhou’s “overall business environment” (rated at 7.29) and the local “tax system” (rated at 7.53).



A respondent pointed out in an in-depth interview that “some Guangzhou industrial parks offer tax incentives to start-up founders in the high-tech sector”. For instance, Guangzhou Baiyun District has formulated tax and fee deduction policies for private science and technology parks to support the development of innovation and technology enterprises. Tax authorities there have also set up an on-line enquiry service with dedicated staff to answer queries from start-ups, and regularly update start-ups on preferential policies to make tax payment more efficient.



With regard to the “level of advancement of IP protection system” (rated at 7.38), respondents said that the government has worked hard to improve the IP protection regulatory regime, to ease problems in IP rights protection such as the exorbitant protection fees, and to nurture a business environment respecting IP. In 2021, Guangzhou promulgated a set of measures for strengthening the protection of IP rights, setting out 25 specific measures to step up IP rights protection. These include establishing a multi-departmental IP rights protection regulatory mechanism and instituting a system of IP rights technical investigators.

Respondents believed that Guangzhou’s reach to the global market (rated at 7.03) could be strengthened. In 2020, Guangzhou’s utilised foreign direct investment stood at US\$7.16 billion whereas the figure for Shenzhen was US\$8.68 billion. Guangzhou



is a key commerce and trade centre in the Pearl River Delta region where traditional business models are well-established, but the city's newer non-traditional forms of business are less supported. Respondents hoped for greater efforts from the government to expand channels for promoting innovative products overseas such as by hosting more international exhibitions related to innovation and technology.

Funding Availability

Guangzhou has a relatively low score (6.83) in “overall funding availability”. Many respondents identified that the difficulty in financing in Guangzhou was a major factor holding back the development of start-ups.



During an in-depth interview, He Chang, the founder of Guangzhou Jiale Information Technology [Case Study 4], said: “Our team has expanded from 40 to more than 100 people in just over a year. Our business could have seen faster growth with financing support, but investment institutions tend to favour bigger companies for higher returns these days.”

“I still find it rather difficult to get the financing we need at present,” concurred Song Liguo, founder of Guangzhou iTingbaby Technology Co. Ltd.: “When we started our Pre-A round of financing, we encountered many difficulties in spite of our efforts to contact investors because our core products cannot generate immediate profits or have good sales figures.”

Nevertheless, most respondents agreed that the government is actively directing financial resources towards innovation and technology sectors to further the development of the local venture capital sector. In August 2021, Guangzhou issued a policy document on further promoting the integrated development of financial technology and industry sectors. In doing so, Guangzhou explicitly encouraged the



formation of diversified market-oriented funding sources by venture capital institutions through the flotation of shares, the issuing of fixed income products such as corporate or company bonds, and the raising of insurance funds. The document also rolled out policies to direct the flow of social capital towards early-stage investment projects. For example, equity investment institutions that have invested in Guangzhou's small- and medium technology enterprises at the seed capital or start-up stage will receive a reward equivalent to 15% of the actual investment amount received, with the reward capped at RMB5 million per year. Moreover, by bringing together Guangzhou's high-quality technology projects and Shenzhen's advantages in venture capital, Guangzhou will foster the integrated development of Guangzhou and Shenzhen's venture capital capabilities, thereby creating an even better entrepreneurial culture for start-ups.



Case Study 4: Situation Merits Switch to Cross-border E-commerce Exports

Interview with He Chang, Founder of Guangzhou Jiale Information Technology Co. Ltd.

Cross-border e-commerce has seen robust growth in China in recent years. He Chang first launched his trading business in Fuzhou, in Fujian province, in 2016. Being sensitive to market changes, he switched from domestic trade to cross-border e-commerce exports in 2018. He founded *Jiale Information Technology Co. Ltd.* in Guangzhou in 2020 with a branch in Chengdu and an office in Shenzhen. He told us about how he established his cross-border e-commerce garment export business and achieved sustained growth in spite of the pandemic by leveraging Guangzhou's supply chain support and Hong Kong's international logistics and transport advantages.

GBA start-up environment

Seeing the robust growth of cross-border e-commerce in 2018, He began looking into the development potential of this business and the opportunities of using the "China brand" to open up overseas markets. He established *Jiale* in April 2020 as a cross-border e-commerce garment exporter. When asked what prompted a Fuzhou trader to start a new business in the Guangdong-Hong Kong-Macao Greater Bay Area (GBA), He pointed to the policy incentives - including subsidies for tax payment, entrepreneurship, rent and incubation centres – that have made the GBA an excellent environment for start-ups. He added that the central government's encouragement of cross-border e-commerce had also increased his confidence in starting a business there.

Explaining why he chose Guangzhou rather than one of the other GBA mainland cities to restart his business, He listed its dynamic cross-border garment trade and excellent start-up environment, saying: "We chose Guangzhou as our entry point for global trade because it is very mature in its supply chain and other supporting facilities. To us, talent can be trained, but a production chain is shaped by the local market. The industrial environment is very important in the garment business. The government's backing and supporting measures are both important in the garment industry⁹. Guangzhou is more mature and efficient than other cities in fabrics and accessories supply, processing plant configurations and other respects. It only takes two to three days to produce a

⁹ Editor's note: These include the policy document for supporting the transformation and upgrading of the denim textile clothing industry in Zengcheng District (《增城區牛仔紡織服裝產業轉型升級扶持辦法》) issued by the government of Guangzhou in 2018 and the work plan for giving key enterprises in the fashion industry targeted support in their high-quality development issued by the *Guangzhou Development and Reform Commission* (《關於精準扶持時尚產業重點企業高質量發展工作方案》) in 2021.



piece of garment in Guangzhou. Secondly, we value talent. The professionalism of our staff, their understanding of the entire industry and their experience are all very important. Guangzhou has an ample supply of talent in this respect."

Not everything ran smoothly, however. He described how he had encountered financing difficulties as a start-up, saying: "Our team has expanded from 40 to more than 100 people in just over a year. Our business could have seen faster growth with financing support, but investment institutions tend to favour bigger companies for higher returns these days. I still find it rather difficult to get the financing we need at present."

Explaining the roles played by the company's Chengdu and Shenzhen operations, he said: "There are many universities in Chengdu and university graduates have rather limited job offers in the city. We stand a better chance of recruiting capable graduates there. Our Chengdu branch handles website building, garment procurement, and marketing and sales while our Shenzhen office is mainly responsible for new media business. Shenzhen has more influencers and promoters, which is why we base our publicity and promotion team there."

Emerging business model

While mainly targeting the European and US markets, *Jiale*'s business also covers South-east Asia. Its products include both men's and ladies' clothing. In addition to business attire, it also offers local fashion and accessories to meet market needs. Giving an example of the range of clothes his company sells, He said: "We also offer street culture clothing and the ever-popular denim series in the US market. Our team tries to keep abreast of fashion trends from overseas social media platforms, fashion weeks and other channels. In the fashion industry, the markets in Europe and the US, the ASEAN countries and China are not quite the same and the consumer preferences are also different. We adjust our designs to suit the preferred styles in each market."

He shared his thoughts about how start-up businesses can succeed in finding their place in the keenly competitive garment market, saying: "A brand needs to have its mission and create value for its clients and society. We are trying hard to promote our brand, consolidate brand positioning and increase customer loyalty and publicise ourselves through *Facebook*, *Google* and *TikTok* in the light of overseas market conditions. We also invite overseas friends to carry out brand publicity and live-streaming marketing for us, such as trying out our clothes, taking pictures and writing blogs for posting on social media for customer engagement. In addition, we also join the celebrity unions of garment industries in overseas markets and do publicity together. Targeting particular markets, such as the US and Germany, we also conduct targeted marketing, marketing in minority languages, and so on."¹⁰

In order to better develop online sales and make better use of data resources, *Jiale* makes use of big data, including cloud storage and smart systems, in sales and advertising. Explaining why this is so important, He said: "We are increasing the use

¹⁰ In this article, minority languages refer to foreign languages spoken in a small number of countries.



of big data in sales, such as smart advertising, personalised recommendation and user profile analysis, for more targeted marketing. Cross-border e-commerce orders are mostly urgent and the garment industry is special in that it involves many different sizes, colours and styles. For this reason, we have been trying to upgrade our production and management systems by using technology and innovation in the management of production facilities and using smart supply chain and smart storage in manufacturing production.”

According to the *General Administration of Customs*, China’s cross-border e-commerce imports and exports have increased rather than fallen during the pandemic. China’s cross-border e-commerce imports and exports soared by 31.1% to RMB1.69 trillion in 2020. Exports accounted for RMB1.12 trillion, an increase of 40.1%. By switching from domestic trade to cross-border e-commerce exports, He is riding on the crest of this new wave, but he believes it is important to focus on his company’s long-term position, saying: “I don’t think the blind pursuit of GMV (gross merchandise volume within a given time) can bring investors and the entire industry big returns. We believe that building our brand into a brand of value that will win the recognition of consumers and building our platform into a differentiated platform is the best return.”

Leveraging Hong Kong’s advantages

Hong Kong is the world’s largest and most important offshore renminbi business hub. He said part of his company’s cross-border business is settled in Hong Kong, and the company has been registered in Hong Kong for future expansion. Explaining the reasoning behind these moves, He said: “Our Hong Kong operations will be responsible for overseas co-operation in future, including co-operation with *Facebook* and *Instagram*. Compared with the mainland, overseas companies are more familiar with the business environment in Hong Kong. Moreover, overseas clients generally do not need a visa to visit the city and can communicate with Hong Kong people in English. It is also easy for us to visit the city. Hong Kong is therefore an ideal bridge between mainland companies and overseas markets.”

He also pointed to Hong Kong’s status as a free port. It practises a free trade policy, has practically no trade barriers and no customs duties are imposed on goods entering or leaving the territory. He explained that this is very important for a cross-border e-commerce business like his own, saying: “Hong Kong is an international logistics hub and over 60% of our goods are exported via Hong Kong. In general, goods are packed and dispatched from our Guangzhou warehouses and sent to Hong Kong airport via Shenzhen and Luohu for shipment to different destinations. It is equally fast and convenient for goods to be dispatched to Hong Kong airport via the Hong Kong-Zhuhai-Macao Bridge. On the whole, international flights are more frequent at Hong Kong International Airport than at domestic airports and can better meet the schedules of export companies.”

However, with the robust growth of cross-border e-commerce, He believes Hong Kong needs to increase the frequency of its international cargo flights. Illustrating the reason for this, He said: “Air parcel shipment is costly, usually costing RMB60-80 to send a 1kg parcel by air. During the peak season or the ongoing pandemic, it may go up to RMB150/kg and the parcel may still be stranded at the Hong Kong airport due to flight shortages. Although passenger aircraft can also carry cargo, the capacity is limited. Many logistics companies are chartering flights for the job. However, each logistics company has its own



considerations and may not be able to cater to the needs of all parties. This increases logistics cost. Late arrivals may lead to increased complaints and rejection rates."

Future opportunities

As an entrepreneur, He believes that a number of other initiatives would help make Hong Kong more attractive to start-up businesses. For example, he wants Hong Kong's professional services platforms to offer a certain amount of free legal, financial and other related policy counselling to businesses, saying: "People who are starting their business may not be familiar with the legal and financial policies in overseas markets and may have difficulty finding suitable legal and financial assistance. I also hope to see the easing of policy restrictions on mainlanders working in Hong Kong and the provision of flexible arrangements for companies, such as short-term stays. Lastly, the cost of living is very high in Hong Kong. I hope the Hong Kong government will increase its support for mainland entrepreneurs in Hong Kong, such as rent reduction."

Development of the GBA is a major development strategy for China's reform and opening-up in the new era. He said he wants young people in Hong Kong to look further afield than the SAR and take advantage of opportunities outside Hong Kong. For example, He believes that Hong Kong and mainland university students should take part in more exchange programmes and be allowed to do internships in each other's start-up businesses to deepen their knowledge and understanding of the GBA.

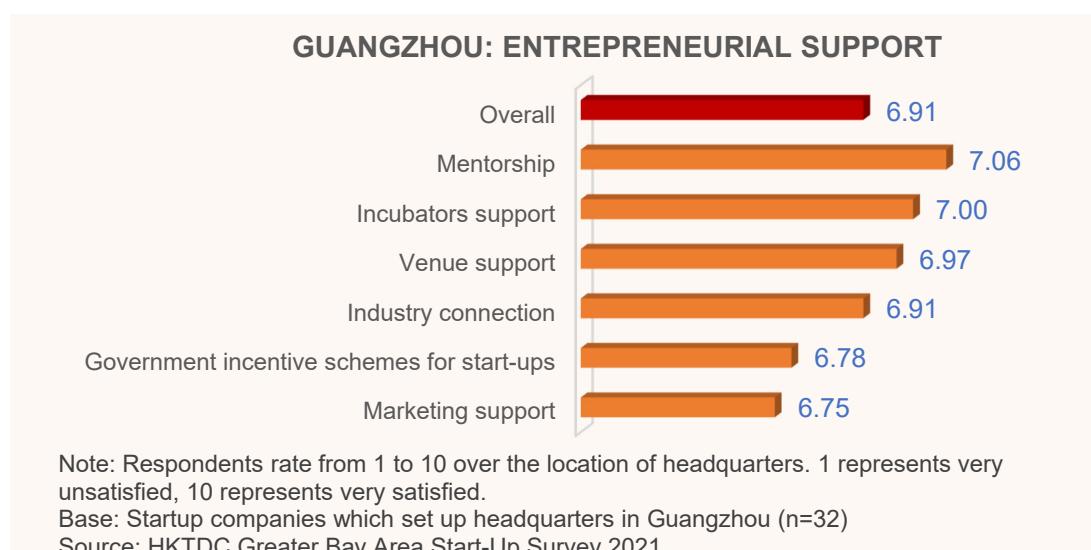
Looking to the future, He believes that the *Covid-19* pandemic has quickened the pace of cross-border e-commerce development despite its serious impact on businesses. He explained how the crisis has changed consumer behaviour, saying: "People in Europe, America and South-east Asia weren't in the habit of shopping online in the past, but the pandemic has changed that and prompted us to make upgrades and innovations in our business model. We are preparing to build an SaaS platform¹¹ and big data centre to make our operations smarter and more systematic and further expand our scope of development."

¹¹ SaaS, or Software as a Service, allows users to use real-time software via the internet.



Entrepreneurial Support

Guangzhou scored well (rated at 7.06) in the provision of “mentorship”. The municipal government of Guangzhou offers subsidies to university students to encourage them to participate in entrepreneurship training and entrepreneurship simulation to reduce the risks of start-up failure. Incubators will also offer one-on-one mentorship in providing professional advice to start-ups. Song Liguo, the founder of Guangzhou iTingbaby Technology [Case Study 9], mentioned during an in-depth interview that, in the Nanshan incubator park where his company is located, company visits and mentorship activities are conducted every quarter to foster networking and connection among start-ups.



Start-ups gave a relatively low rating (of 6.78) to Guangzhou’s “government incentive schemes for start-ups”. During an in-depth interview, a respondent pointed out that the scope of Guangzhou’s start-up support policies is too narrow, so much so that many entrepreneurs cannot get the support. For example, “Some districts in Guangzhou require that a founder must have an annual salary of over RMB300,000 before they can enjoy preferential fiscal and taxation treatments. But many founders of start-ups are not receiving any salary at all, so they cannot enjoy such benefits.” Cancan Jin, the founder of 5P Medicine [Case Study 5] also said: “in the course of setting up our company, we used applications such as the internet and big data, but we were not classified as a high-tech company because our main business was in the field of psychology. Because of this we were unable to receive any government support.” Entrepreneurs would like the government to expand the scope of its incentive schemes so that more start-ups can benefit.



Case Study 5: Wellness App Promotes Mental Health

Interview with Cancan Jin, Founder 5P Medicine

As society undergoes rapid changes the pace of life is getting faster, which in turn exerts increased psychological stress and mental burden on people. Against this backdrop, Guangzhou-based start-up 5P Medicine offers offline and online exercises and courses on mindfulness meditation and psychology-related topics to help people's mental health in stressful environments. In an interview with HKTDC Research Cancan Jin, Founder of the company, described how his app can help users improve their psychological health and what challenges start-ups are facing in Guangzhou.

The 5P Medicine App

The company's *5P Medicine* app is designed to help users relieve emotional stress and mood disorder by practising mindfulness meditation. Explaining the app, Jin said: "Take women for example. We have designed courses to help women deal with pressures occurring in different phases of their life. These include emotional problems in the workplace; prenatal anxieties and postnatal depression; parent-and-child relationship; as well as the more common disorders such as insomnia, anxiety and depression.

"There are many critical moments in women's lives that are closely related to emotions. In view of this, our products and services aim to help people 'avert pain' on the one hand and 'embrace happiness' on the other."

Jin noted the disconnect between improving material wealth and declining mental health, saying: "In modern society, the living standards of many people may be high, but their quality of life is low due to various emotional and psychological problems. Hence, in helping people 'avert pain and embrace happiness', *5P Medicine* is designed not to cure physical illness but emotional distress."

AI-enhanced services

Before launching the *5P Medicine* app, Jin's company mainly focused on offline classes. When asked why they switched online, Jin explained: "We used to be an offline training institute¹², but then it occurred to us that many of these meditation exercises and psychology courses should also have an audio version for

¹² The offline training institute was run by *Guangzhou Blunt Force Network Technology Co. Ltd.*



convenience. We therefore launched an app in 2018 which mainly provides an audio version for practising meditation.

“Later, as we found that it was very important to digitise the course content, so we set up a cloud computing start-up named *Xinliu* in December 2019 digitising our courses using the internet and big data. Now we are also in the process of using artificial intelligence (AI) to provide users with enhanced personalised services.”

Currently, *5P Medicine* users are mostly from Chinese-speaking markets including mainland China, Taiwan, Singapore and Malaysia. Jin said: “Users on the mainland are mainly the general public, while the majority of users in other markets are professionals. Since there are not many companies offering non-medical mental health services in the mainland, we have attracted a large number of people to join our courses. As we have organised training courses in many places such as Guizhou and Yunnan and the response from the participants has been positive, our services gradually became widely known by word of mouth.

“At present, there are two major groups of participants in our courses. The first are professionals such as psychologists and university psychology teachers who wish to gain an understanding of the stress and emotion related problems of the general public through our courses. The second group are people who seek help from these practising psychologists and psychology teachers and are referred to the courses by them.”

To date, the *5P Medicine* app has about 100,000 users, many of whom are regulars. Although some of the user groups are from Tibet, Guizhou, Qinghai, Gansu, Hunan and Hubei, the company’s future market development focus will be on the Greater Bay Area (GBA). Jin said: “The GBA has a population of over 86 million, which is larger than that of many European countries. As life pressures increase, many people need psychological support in order to manage their emotions and enhance their quality of

life. At the present stage, our development goal targets the cities of Guangzhou, Shenzhen, Dongguan and Foshan.”

However, *Covid-19* has damped business growth. Jin said: “The pandemic has dealt a serious blow to our business. Our company income used to be derived from online and offline operations. But due to the pandemic, teachers from abroad cannot come to China to



The *5P Medicine* app.



give lessons and so all offline courses and activities have been suspended. Meanwhile, income from online courses and activities is not too steady.”

Lack of start-up support

On the support given by Guangzhou to start-ups, Jin said: “Our company, located in the *Guangdong Venture Factory*, is a small business with only about 10 staff. Since our company is not a new- and high-tech enterprise, it is difficult for us to acquire funding. We are currently developing some digital therapies by using AI to raise the quality of service. Although we tried to apply for funding, the application was not successful. We believe only those companies engaged in high precision and state-of-the-art technologies would find it easier to obtain government subsidies.”

Start-ups are not only denied government support, they are also pressured by the high cost of employing scientific research or technical talent, which is indirectly caused by the high concentration of new- and high-tech companies in Guangzhou and Shenzhen. Jin said: “For example, the monthly salary of our company’s Java engineers is RMB20,000 and that of mobile engineers is RMB20,000. Any pay lower than these levels is unlikely to attract the right personnel.

“In the case of Shenzhen, it is practically impossible to recruit any talent at these pay levels because the accommodation costs there are too high and the average monthly salary is about RMB20,000. In other words, for a newly established company, the operating costs for the first half year would be as high as RMB500,000-600,000 while human resource cost keeps going higher and higher. Also, there are many enterprises in Shenzhen offering high salaries which have further pushed up human resource costs across the board. To a company like ours, we not only need technical staff, we also need product managers and designers. All these posts added together would raise the monthly cost to over RMB200,000.”

Hong Kong’s advantage

On Hong Kong’s functions and role in the GBA start-up ecosystem, Jin said: “The position of Hong Kong as an international financial centre can help the mainland in areas such as fundraising, investment, management and market exit¹³. Hong Kong’s capital market serves as an excellent exit channel. Also, in Hong Kong, where there is no foreign exchange control and financing cost is low, funds are available from all over the globe. However, in reality, unlike sizeable companies, small businesses are unable to capitalise on these financial advantages.”

Because of this, Jin hopes that Hong Kong can attract more foreign capital to support entrepreneurs in the GBA so that start-up companies in the region can grow strong before expanding into overseas markets. After all, Hong Kong is an ideal financing platform for mainland start-ups.

¹³ Fundraising, investment, management and market exit are the four phases of private equity investment.



3. Strengths and Weaknesses of Hong Kong's Start-up Ecosystem

R&D Environment

The start-ups surveyed showed great appreciation of Hong Kong's level of "recognition of testing & certification services" (rated at 7.03). The city is served by a robust certification system of international repute, and many of its laboratories and certification bodies are recognised globally. Organisations with accreditations issued by the Hong Kong Accreditation Service can acquire worldwide recognition through the multilateral mutual recognition arrangements that have been established. As of October 2021, there were 236 accredited laboratories, 26 accredited certification bodies and 23 accredited inspection bodies in Hong Kong.



Furthermore, Hong Kong has performed remarkably in "universities/research institutions support" (rated at 6.97), as evidenced by the city's many world-renowned universities excelling in basic and applied research. Hong Kong's R&D strengths lie particularly in sectors like healthtech and medtech, artificial intelligence and robotics. Three Hong Kong universities are listed among the world's top 50 universities in the QS World University Rankings 2022.

Given its strong research capabilities, Hong Kong has managed to lure many top-notch universities and research institutes to the city. For example, the Dr Li Dak-Sum Research Centre (The University of Hong Kong - Karolinska Institutet Collaboration in Regenerative Medicine) provides a first-rate environment for research on stem cells and regenerative medicine. The Hong Kong government has also inaugurated two



InnoHK Clusters, namely Health@InnoHK focusing on healthcare technologies and AIR@InnoHK focusing on artificial intelligence and robotics technologies. The two clusters have successfully attracted 28 research laboratories set up by world-class universities and research institutes in collaboration with local universities.

In recent years, closer ties have been forged between universities and research institutes in Hong Kong and Shenzhen. Through pooling their technological innovation and production resources, the two cities have been able to complement each other's strengths to accelerate the commercialisation of research results. A number of outstanding projects have been nurtured, one being Da Jiang Innovations, a world-famous drone producer. Currently, six Hong Kong tertiary education institutions have established 72 research institutes in Shenzhen running some 300 projects to commercialise their research results and technical services, while 151 innovation projects are funded jointly by Guangdong and Hong Kong.

Hong Kong was less well judged for “R&D talent availability” (rated at 6.76) and “human resources costs” (rated at 6.70), suggesting that the shortage of R&D talent in Hong Kong is a cause for concern. The consequent rising costs of researchers, coupled with overseas talents’ hesitation to come to Hong Kong because of the city’s high living costs, will ultimately erode the competitiveness of Hong Kong’s R&D environment. In an in-depth interview, Wei Lixin, Vice President of Macao Young Entrepreneur Incubation Centre [Case Study 10] commented: “Land supply in Hong Kong and Macao is tight and the costs of human resources and operation are higher than on the mainland. This has exerted considerable pressure on start-ups. Since Hong Kong and Macao lack production capabilities while GBA mainland cities such as Shenzhen, Dongguan and Guangzhou have highly concentrated manufacturing zones, start-ups in the two SARs should focus their attention on the GBA.”

Business Environment

With a superb “overall business environment” (rated at 7.13), Hong Kong has lured many start-ups to the city. The survey results show that respondents were satisfied with the service level and quality of Hong Kong’s “professional services” (rated at 7.28). In an in-depth interview, Belinda Wong, Manager of Startup China Club (Hong Kong) [Case Study 6], said: “Hong Kong has a well-developed professional services sector, especially in areas like financial and legal services. Practitioners in Hong Kong command professional knowledge of overseas and mainland markets and are fully competent in providing support to growing start-ups.”



HONG KONG: BUSINESS ENVIRONMENT



Note: Respondents rate from 1 to 10 over the location of headquarters. 1 represents very unsatisfied, 10 represents very satisfied.

Base: Startup companies which set up headquarters in Hong Kong (n=175)

Source: HKTDC Greater Bay Area Start-Up Survey 2021

Hong Kong was rated highly for its “tax system” (at 7.21). The city is noted for its simple tax regime, whereby only three types of direct tax (salaries tax, profits tax and property tax) are levied. Tax levels are low and allowances are granted to lessen the tax burden. For start-ups, the profits tax is of the utmost concern. According to Hong Kong tax laws, start-ups, whether by local or overseas residents, must pay a tax on profits generated by their business in Hong Kong that have a source in Hong Kong. However, if a part of the company’s profits has a source overseas, that part of the profits is not taxable in Hong Kong.



Case Study 6: The Hong Kong Advantage

Interview with Belinda Wong, Founder of Leader Corporate Services Limited and Manager of Startup China Club (Hong Kong)

Belinda Wong holds a Master's Degree in Business Administration and a Bachelor's Degree in Social Sciences. She is a Fellow Member of the *Hong Kong Institute of Directors*, Fellow Member of the *Hong Kong Securities and Investment Institute*, a member of the Hong Kong Chartered Governance Institute. Having provided company secretarial services to local and multinational corporations for over 30 years, Wong has amassed a wealth of experience in all kinds of company secretarial work, such as corporate restructuring, merger and acquisition, and business transfer. She is the author of the *Hong Kong Company Secretary's Practice Manual* and *Hong Kong Company Secretary Checklist*. In 2010, she founded *Leader Corporate Services Limited*. In 2019, building upon her extensive experience, Wong established the *Startup China Club (Hong Kong)* to foster exchanges and networking between start-ups overseas and those in the Greater China Region. Wong spoke to *HKTDC Research* recently about the advantages of starting a business in Hong Kong and how Hong Kong can complement the strengths of cities in the Guangdong-Hong Kong-Macao Greater Bay Area (GBA) to create synergy.

A start-up platform

In 2019, Oliver Döring, the founder of *The Startup Club* in Germany, invited Wong to inaugurate the *Startup China Club (Hong Kong)*. The idea was to build an interactive platform to connect and promote exchanges between start-ups in the Greater China Region and their overseas counterparts. As well as providing market updates, the platform also hosts webinars and offline events on different formats and themes, designed to inspire innovative thinking among entrepreneurs. Since February 2020, Wong has organised a great number of online and offline activities in Hong Kong. Local events aside, *Startup China Club (Hong Kong)* has partnered with overseas bodies in staging online events - an example of this being its collaboration with Malaysia's *Asia Entrepreneurs Academy* (an organisation offering mainly management training for entrepreneurs and start-ups) on a webinar on business regulations in the two jurisdictions.



 Wolters Kluwer



WEBINAR

Regulatory Framework on Doing Business in Malaysia vs Hong Kong

26 August | 7:00 pm – 8:30 pm(GMT+8 Hong Kong and Malaysia) | English



Ms. Belinda Weng
Director, Leader Corporate Services Limited
Author of the Hong Kong Company Secretary's Practice Manual



Dr. Cheah Foo Seong
Author of the Guide to Company Secretarial Practice in Malaysia



Dr. Joseph Lee
Founder of Asia Entrepreneurs Academy@ASEAN

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Elaborating on the platform, Wong said: “Currently, we do not focus on a specific type of activity or service. ‘Start-up’ is in fact a concept straddling wide-ranging fields. Despite the general belief that start-ups are mostly about technological innovation, technology may not necessarily be the focus of innovation. One can innovate in all manner of ways - for example, using novel methods to perform old tasks.”



THE STARTUP CLUB

STARTUP CHINA CLUB MEETUP

Theme
Sustainable Marketing with greenWeb

6.30-8.30 pm, 5 Aug 2021
Language: English
Africa Center Hong Kong
Vincent Commercial Centre, 12/F, 21 Hillwood Rd, Tsim Sha Tsui, Kowloon, HK



**Speaker
Patricia Slawinska**
Head of Growth
Doerscircle.com



**Speaker
Vishwas Thakkar**
Founder & Head of Digital Strategy
Cenitnacy Ltd



**Event Organiser
Nicky Cheung**
Startup China Club

Limited seats. Please RSVP

Startup China Club offline event.

Among the many different types of start-ups Wong has come across, some have succeeded while others have failed. Giving her take on why start-ups fail, Wong said: “The first two to three years are the most critical. Entrepreneurs must clearly define their company’s positioning and ascertain the potential of their products and services. Some may be clear about where their company is heading but fail to fully understand the market reception of their products and services. Others may be too idealistic and once the market does not respond as expected, they are at a loss on



the course to take. There are also some young entrepreneurs who partner with their friends or schoolmates, in which case it is crucial that they complement each other in their knowledge and skills.”

Hong Kong’s advantages

Wong believes that although mainland cities like Shanghai and Beijing have become more international in recent years, Hong Kong, given its high degree of internationalisation, remains a better place for facilitating start-ups’ growth. Listing the city’s advantages, Wong said: “With the free flow of information nowadays, it is not hard to obtain information in overseas markets. But compared to the mainland, Hong Kong has quicker access to information in the global business world. Prompt access to market information is critically important for start-ups.

“Furthermore, Hong Kong may be a small market, but it is an ideal platform for start-ups to promote and test their products and services, given that start-ups often start out on a small scale with limited manpower and funds. Hong Kong is also an international business centre where many expatriates work and live. As such, despite their limited resources, start-ups can easily get their products and services to non-Chinese users. Start-ups in Hong Kong can also reach out to overseas markets through the local offshoots of overseas companies and chambers of commerce in Hong Kong.”

Another of Hong Kong’s strengths is its well-developed professional services sector, especially in areas like financial and legal services. Practitioners in Hong Kong command professional knowledge of overseas and mainland markets and are fully competent in providing support to growing start-ups. Wong also mentioned another of Hong Kong’s pluses, saying: “As an international financial hub, Hong Kong has a robust financial system with a virtually unrestricted flow of capital, and funds can be raised here relatively easily.”

Wong believes that the environment for start-ups in Hong Kong has improved significantly in the past 10 years. Citing some examples of how things have improved, Wong said: “The Hong Kong government has launched a number of support funds for start-ups, including the *Technology Start-up Support Scheme for Universities* of the *Innovation and Technology Commission*, the *Corporate Venture Fund* of the *Hong Kong Science Park* and the *Cyberport Macro Fund* of the *Cyberport*. Moreover, the *Hong Kong-Shenzhen Innovation and Technology Park* in the Lok Ma Chau Loop adjoining Shenzhen offers Hong Kong’s innovation and technology ecosystem not only space to grow, but also proximity to tap the supply chain, manufacturing capabilities and talent pool in Shenzhen. In recent years, universities in Hong Kong have also begun offering courses on how to do business, while a number of private companies have set up innovation centres to provide various forms of assistance to start-ups, like helping them seek investors and develop connections.”

The Covid-19 challenge

During the *Covid-19* pandemic, many businesses have been struggling to stay afloat. Pointing out that the challenge has been particularly hard for start-ups, Wong



said: "Only the fittest can survive during times like this. As borders have closed, many networking activities and business negotiations have gone online, seriously hampering start-ups' development. For example, it has not been possible to conduct business missions during the epidemic. While start-ups can still feature themselves in seminars organised by the *Hong Kong Trade Development Council* or major chambers of commerce, these by themselves are not sufficient. We hope the pandemic will end soon and normal business activities can resume, and that upon the re-opening of the borders between Hong Kong and the mainland, more networking activities for generating new business opportunities can take place."

Pointing to a silver lining, however, Wong added: "Along with the crisis have come opportunities. Businesses have now learned not to focus on a single market but to be flexible in order to cope with market changes. At the same time, the pandemic has driven up considerably the demand for health-related products and services, and the prospects for sectors like life sciences, healthcare and pharmaceuticals are particularly promising."

Complementing roles

Having gone on business missions to various mainland cities before the *Covid-19* outbreak, Wong is convinced that different GBA cities should exploit their unique strengths to create synergy and fuel the region's overall economic development. Expounding on this theory, Wong said: "Compared to other GBA cities, Hong Kong is smaller in size and lacking in manpower in sectors such as manufacturing. It should therefore consider collaborating and sharing out the work with other GBA cities. For instance, while Hong Kong excels in basic research and life sciences research, it will have to co-operate with mainland factories for mass production of products.

"I have arranged visits of Qianhai of Shenzhen for my clients, who are impressed by Qianhai's infrastructure and relatively low start-up costs compared to Hong Kong. As for other cities like Dongguan and Shenzhen, the ample support for start-ups, including funds open to application by start-ups, coupled with their convenient transport links with Hong Kong, have also made them attractive destinations for entrepreneurs."

Wong has amassed vast experience in the business sector over many years. Offering advice based on that experience to those interested in venturing into the mainland market, Wong said: "The mainland market is way larger than Hong Kong. To build their people and business networks there, start-ups could proactively approach start-up incubators and training bodies to seek information and professional advice. They should also be aware of the cultural differences between the mainland and Hong Kong. When recruiting staff, special attention should be paid to candidates' skill sets and sense of loyalty. If overseas staff are hired to work on the mainland, entrepreneurs should bear in mind whether they can adapt to the work style and lifestyle on the mainland."

Boosting Hong Kong's role

The environment for start-ups and relevant government policies in Hong Kong have improved gradually. However, Wong highlighted the need to beef up efforts to promote Hong Kong to start-ups, saying: "From my contacts with some overseas



start-ups, I have found that they are unaware of the funds for start-ups and support measures offered by the Hong Kong Government. Hong Kong must step up its promotional efforts overseas on the city's strengths as a start-up platform".

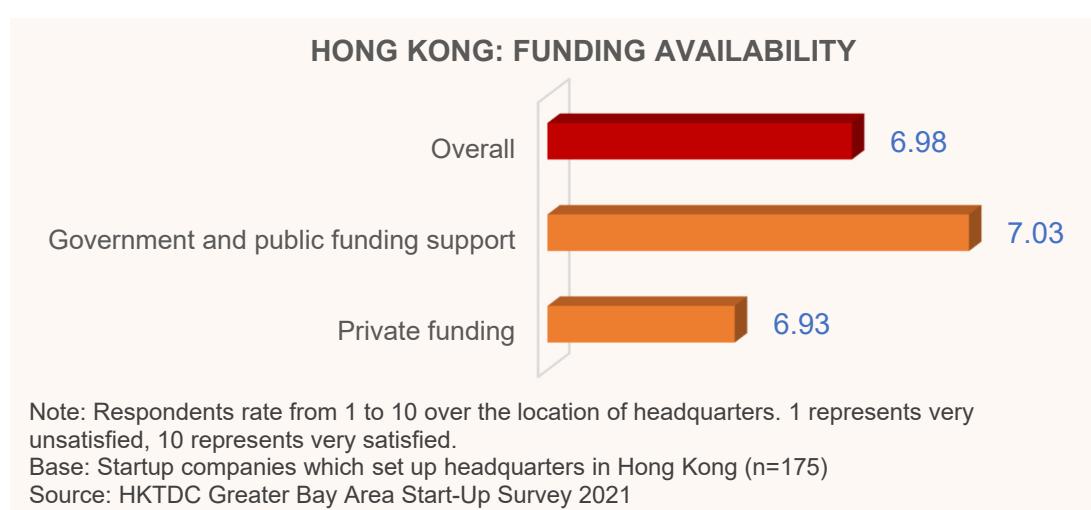
Hong Kong also faces the challenge of implementing the "minimum corporate tax"¹⁴, meaning that there is little room for Hong Kong (a simple, low-tax regime) to offer further tax incentives to lure entrepreneurs. Although Hong Kong has done well in implementing policies to create a favourable start-up environment and in grooming talent, Wong suggested that more international elements be incorporated in talent training to keep start-ups posted on developments on the mainland and overseas. This will help start-ups expand into different markets, broaden their international horizon and boost their overall competitiveness.

¹⁴ On 1 July 2021, the *OECD* announced that 130 countries and jurisdictions have agreed to reform international taxation rules, so that multinational corporations will be levied a minimum corporate income tax rate of at least 15% to prevent them from shifting their profits to low-tax jurisdictions.



Funding Availability

For “government and public funding support”, the Hong Kong government relies mainly on the Innovation and Technology Fund of the Innovation and Technology Commission to provide funding to support research and development, commercialisation of research results and promotion of technology applications. In the survey, respondents were satisfied with the Hong Kong government’s funding support for local start-ups, giving it an average rating of 7.03. During an in-depth interview, Steven Cheung, the founder of Seaplane Hong Kong [Case Study 7], revealed how he made good use of the government’s Technology Voucher Programme and Greater Bay Area Youth Employment Scheme to secure seed funding and cut costs.



In contrast to its high rating for “government and public funding support”, Hong Kong scored lower (at 6.93) for “private funding”, indicating that there is much room for improvement. One respondent pointed out that investors in Hong Kong have a low appetite for investing in early-stage projects such as seed capital funding. Investors in Hong Kong are mostly family foundations or private investors, and they refrain from investing when they feel there is instability or increased risk in the market. Hence, it is very difficult to obtain private funding in Hong Kong. In contrast, mainland investors are mainly venture capital funds. If they feel there is increased risk, they still invest although they are more cautious. Relatively speaking, it is easier for mainland start-ups to obtain private funding. Mainland investors also offer comprehensive support such as network creation and marketing to help the fast development of start-ups.



In the in-depth interviews, some start-ups expressed their interest in listing on the market through SPACs¹⁵ as a way to increase fundraising channels. Since the Covid-19 pandemic outbreak, there has been a boom in public listings through SPACs in the global start-up and capital market. According to *SPAC Analytics*, the amount of funds raised through SPAC IPOs in the US grew sharply from US\$13.6 billion in 2019 to US\$83.4 billion in 2020. Hong Kong recently completed a consultation exercise to solicit industry views on whether or not to establish a SPAC listing regime. If Hong Kong as an international financial centre can introduce such a regime, it should be able to gather more financial resources and attract more start-ups to come and get public listings. The competitiveness of Hong Kong's start-up ecosystem would also be further enhanced.

¹⁵ SPAC, short for Special Purpose Acquisition Company, is a type of shell company that raises capital through an initial public offering (IPO). The aim is to acquire or merge with a company with existing business operations within a predetermined period (usually two years). A SPAC itself does not have any business operations and, except for the earnings from the IPO and the capital raised by the founders to cover the expenses of the SPAC, it has no other assets.



Case Study 7: New Aviation Opportunities

Interview with Steven Cheung, Founder of Seaplane Hong Kong

Despite the stalling of the global aviation industry during the Covid-19 pandemic, Steven Cheung, a pilot by profession, established *Seaplane Hong Kong* in Hong Kong in the midst of this difficult period. With life getting busier, people need to conduct their business at ever greater speeds. This has led to a strong demand for transport in Hong Kong and the Greater Bay Area (GBA). In order to take advantage of this, Cheung has dedicated himself to developing unmanned aircraft powered by hydrogen fuel cells. The idea is to develop an affordable, fast and convenient air taxi service for people travelling between GBA cities and also to offer an innovative tourism option.

Innovative travel option

Founded in 2020, Seaplane Hong Kong focuses on R&D aimed at enhancing Urban Air Mobility (UAM) – specifically, on developing unmanned aircraft powered by hydrogen fuel cells, with a vertical take-off and landing function. The company has also put a lot of effort into conducting in-depth research on lowering hydrogen power costs, popularising the use of hydrogen power and building hydrogen stations in helipads for electric helicopters. Detailing the company's work progress, Cheung said: "Currently, we are still carrying out R&D on our aircraft, aiming to obtain the relevant certification from the US Federal Aviation Department and European Aviation Safety Agency in 2024-2025. We envisage that during the initial trial run, the aircraft will mainly be used for goods transport. We will wait until the public have a better understanding and confidence in the aircraft's safety before carrying passengers on board." Cheung added that the design, R&D and assembly of the aircraft will all be carried out in Hong Kong. The company now employs 10 full-time staff members who take charge of project management and promotion, while its R&D activities are conducted jointly via partnerships with universities and other businesses.

Compared to an electric aircraft, a hydrogen fuel cell aircraft has a longer range, creates less noise, carries a greater load and costs less. Explaining why he expects hydrogen fuel cell aircraft to become a future trend, Cheung said: "The cost per person per km will be less than six US cents, the noise level can be kept below 65 decibels and the aircraft can travel 400 km after a 2-minute recharge of hydrogen. The problem, however, is that for new-generation nickel-based batteries, their electrode materials' structure becomes less stable with increased usage, thus reducing the batteries' life and safety level. We are researching more advanced hydrogen fuel cells to address this problem and to ensure that passengers can travel safely and comfortably."



When the passenger service is launched, Seaplane Hong Kong plans to initially operate routes in Hong Kong, such as between Central and Kwun Tong, Tuen Mun and Tseung Kwan O. While a journey between Tuen Mun and Central on the MTR now takes around one hour, Cheung expects a trip on Seaplane Hong Kong to take just eight minutes.



Air taxi offers a brand new transport option.

National development strategies

Development of the GBA is one of China's strategic goals, with the Chinese government sparing no effort in recent years to launch a whole host of preferential policies aimed at developing the region. Cheung is optimistic about the company's prospects in the GBA, and has devised specific plans to tap the huge opportunities there. Outlining the plans, Cheung said: "Hong Kong has a population of only seven million, while the GBA is a market with 80 million people. Because of this, our eyes have always been set on the mainland market. We plan to set up waypoints in areas not served by high-speed rail or other operators, providing early morning and evening air services designed to make travelling easier for business travellers. The concept of a GBA one-hour living circle will become a real-life experience. In the long run, we are looking to set up an R&D centre in the GBA to nurture world-class aviation technology talent."

China's 14th Five-Year National Plan calls for efforts to improve aeronautics and astronautics technologies, promote sustainable green energy, and support Hong Kong in enhancing its status as an international aviation hub. Noting that *Seaplane Hong Kong*'s business plans align with the nation's development direction, Cheung said: "Hydrogen fuel cell is a new-generation energy which is green, safe and non-toxic. Since it does not contain carbon, the only byproduct after combustion is water. It is therefore an indispensable source of energy in the drive to achieve zero carbon emission. Major car manufacturers worldwide have successfully developed hydrogen fuel cell vehicles and buses. We want to push the boundaries by applying the technology to the aviation industry, developing aircraft run on this new fuel, and popularising the use of hydrogen power to lessen our dependence on fossil fuels."

Since it began operating, *Seaplane Hong Kong* has strived to improve the environment and engage the community in its work, as well as enhance its corporate governance. The company plans to release an ESG (environmental, social, governance) report regularly to spell out its sustainable development roadmap in full



support of the United Nations' sustainable development plan. Cheung suggested that start-ups should keep an eye on China's development directions in order to seize hold of associated opportunities.

Hong Kong's geographical advantages

Giving his take on the merits of starting a business in Hong Kong, Cheung said Hong Kong is a "blessed territory" for being able to capitalise on the resources, labour and advantages of the mainland nearby. Among the city's other plusses are an international horizon and network, a free and open market and a huge talent pool with extensive international experience and proficiency in both the English and Chinese languages. It can therefore serve as a key platform for start-ups venturing into the GBA and mainland markets. Summarising its advantages, Cheung said: "Hong Kong is a city where east meets west, and our unique culture means that Hong Kong people have a good understanding of both the mainland and global markets. Hong Kong talent can provide insightful views and advice on how to seek market expansion."

Furthermore, Hong Kong is served by a well-developed transport infrastructure, comprising an international airport and high-speed rail system closely linked with major cities on the mainland, Asia, Europe and North America, making the GBA an ideal destination for start-ups. Expanding on the strengths of Hong Kong's transport links, Cheung said: "The journey from Kowloon to Shenzhen on high-speed rail takes only 20 minutes, while a trip from Hong Kong to South-east Asia can be made in just two to three hours. Start-ups setting up their base in Hong Kong can liaise closely with parties in the GBA and overseas investors. If other GBA cities are picked as their base, they can still easily travel via high-speed rail to Hong Kong, an international financial hub, to seek financing for their enterprises."

Resources for start-ups

As various mainland cities develop in different directions, local policies and preferential measures to boost urban development differ from city to city. Start-ups without a legal support team are often perplexed and find it hard to grasp different cities' policies. In trying to understand the mainland market, Cheung came to realise that Hong Kong plays a crucial role in facilitating information flow and exchanges. One example of this is the *Hong Kong Trade Development Council's GoGBA* one-stop digital platform, which offers business information through a *WeChat* mini program to businesses eager to make a foray into the GBA market. Start-ups can access all kinds of information and even make comparisons among different cities via the platform. It is much more convenient than before, when they had to browse individual cities' websites for information. Furthermore, most Hong Kong websites provide bilingual information, which is particularly useful for expatriates eyeing the mainland market. On the part of the government, the *We Venture* initiative and the *Innovation and Technology Commission* run various funding schemes and resource centres to help start-ups. As well as providing R&D support funding, they also offer guidance and professional market consulting services to start-ups.



Seaplane Hong Kong also actively participates in start-up competitions and makes use of the government's *Technology Voucher Programme* and the *Greater Bay Area Youth Employment Scheme* to secure seed funding and save costs. In 2021, *Seaplane Hong Kong* was selected as a beneficiary of the *IDEATION* programme¹⁶ of the *Hong Kong Science and Technology Parks Corporation (HKSTP)*, under which it is entitled to funding support, the use of co-working space and participation in various types of training. Start-ups in the programme not only save on rental expenses, but can also increase their exposure by joining *HKSTP*'s events and exhibitions.

Policies in Hong Kong

According to Cheung, Hong Kong has been rather conservative when it comes to promoting the application of technology compare to mainland China, which could act as a constraint on start-ups trying to innovate their business models and services. Expressing his desire for Hong Kong's laws and regulations to move with the times and the latest technological developments, Cheung said: "Take unmanned vehicles as an example. Many countries have already legislated on legalising the use of fully autonomous vehicles. Under Hong Kong's current legal framework, however, unmanned vehicles cannot be registered or licensed." Cheung noted that while the slow legislative process is somewhat disappointing, the government has started to make determined efforts to catch up, for example the introduction of consumption voucher with electronic wallets, public transport system payment with QR code. Unmanned vehicles pilot projects have been rolled out to promote the application of new technologies – an example of this being the trial runs of unmanned vehicles in the *HKSTP* and West Kowloon Cultural District.

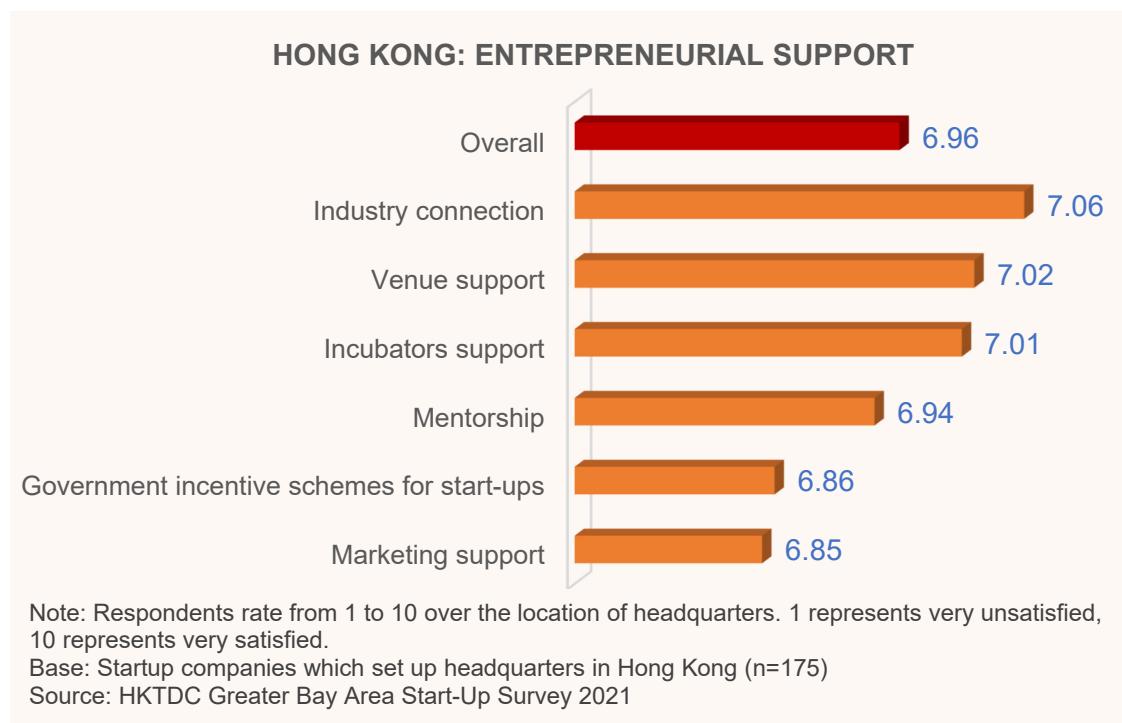
Underlining how important this issue is, Cheung said: "Regulatory issues present the biggest challenge to any technology startup company working in a highly regulated environment, as countries around the world have different laws which are not aligned. While waiting for Hong Kong to enact a law on unmanned aircraft, we will first use existing regulatory framework, and apply for a helicopter licence to offer an air taxi service flown by a pilot. After the relevant legislation has been enacted and we have obtained an unmanned aircraft licence, our pilots will gradually be replaced by unmanned technology." For now, *Seaplane Hong Kong* has yet to discuss the project with the *Civil Aviation Department* and *Transport Department*. But Cheung is confident that once the infrastructure and legislation are in place, *Seaplane Hong Kong* is poised for phenomenal growth. In his view, unmanned aircraft will not only provide a completely new transport option, but also reshape the tourism landscape and have a revolutionary impact on society.

¹⁶ The *IDEATION* programme of *HKSTP* is a support fund dedicated to nurturing technology talent for the future. Every year, applicants with new and practical ideas in the innovation and technology sector are selected to receive a one-year seed funding and other resources to help them establish their platforms and turn their ideas into reality.



Entrepreneurial Support

In entrepreneurial support, start-ups were quite satisfied with Hong Kong's "industry connection", "venue support" and "incubator support", giving these categories an average rating of 7.06, 7.02 and 7.01 respectively.



As flagship institutions for Hong Kong's innovation and technology start-ups, both the Science Park and Cyberport offer one-stop professional mentorship and business services. They help youths put their innovative start-up ideas into practice through such financial supports as preferential office rental and start-up funds, as well as non-financial supports such as laboratory and technical support services and accommodation inside the parks. According to the 2021 Policy Address, the Science Park expansion is being carried out rapidly to provide more room for technology firms and start-ups. The Cyberport 5 Project, which will increase the gross floor area of Cyberport by more than 40% within four years, has also commenced.

Connections are made by stakeholders from local universities, start-up accelerators, shared workspaces and start-up communities working closely together to link up talents, start-ups and entrepreneurs from around the world. For example, the TechnoPreneur Partnership Programme rolled out by the Science Park aims to build technology start-up communities to foster multi-party exchanges to share professional knowledge and market insights.



Nevertheless, Hong Kong's ratings for "government incentive schemes for start-ups" (at 6.86) and "marketing support" (at 6.85) were relatively low. With limited resources, start-ups usually have a difficult take-off stage. Even if their R&D bears fruit, they still have to find the time and money to invest in marketing to maximise their R&D results. Hong Kong's start-ups, however, have limited chances of obtaining marketing support and brand publicity. Generally speaking, only award-winning start-ups in entrepreneurship competitions can get marketing support. The respondents felt that start-ups should get more professional public relations support. For example, incubators could issue press releases, run product launches and participate in exhibitions outside of Hong Kong to help start-ups to expand their market and attract investors.

In the in-depth interviews, a number of start-ups opined that the local community's views on innovation and technology are quite conservative, making it difficult for them to win customer trust at the early stages of their business. Timothy Cen, the founder of Zidian Technology [Case Study 8], hoped that the government could take the role of an early adopter by using the products and services developed by start-ups. This would serve as a lead to increase the confidence of the local community, thereby driving the adoption of innovation while raising the profiles of start-ups.

Leveraging complementary strengths

The results of the survey show that each GBA city has its own distinctive features and strengths. In terms of R&D environment, while Hong Kong has world-leading research institutions and R&D capabilities, Shenzhen is home to some key state-level technology infrastructure, providing a world-class environment in basic research for start-ups. In the area of funding, the governments of Shenzhen, Guangzhou and Hong Kong are all offering different forms of subsidies to back the development of start-ups. Nevertheless, in terms of private funding, the venture capital field in Shenzhen is more active and venture capital funds are plentiful, thereby bringing more financing opportunities to start-ups.

Entrepreneurial culture in the GBA is vibrant. There are many incubators and industrial parks in Shenzhen, Guangzhou and Hong Kong that offer all-round entrepreneurial advice and business services to companies. They also organise regular networking activities to bring different start-up communities together. Still, the majority of start-ups believe that the respective governments could improve their incentive schemes, and become early adopters, leading the way in the use of entrepreneurial products and services. Furthermore, while Hong Kong has a highly internationalised business



environment where the rule of law prevails and the tax system is simple, information and capital in Shenzhen can flow quickly at home and abroad. There are professional services providers with good knowledge of overseas and domestic markets in all three locations, so they are ideal places for start-ups to establish their businesses. By collaborating with each other, consolidating their resources and complementing their advantages, these three GBA cities can drive the further development of the start-up system in the region.



Chapter 4:

Start-Up Challenges and Opportunities



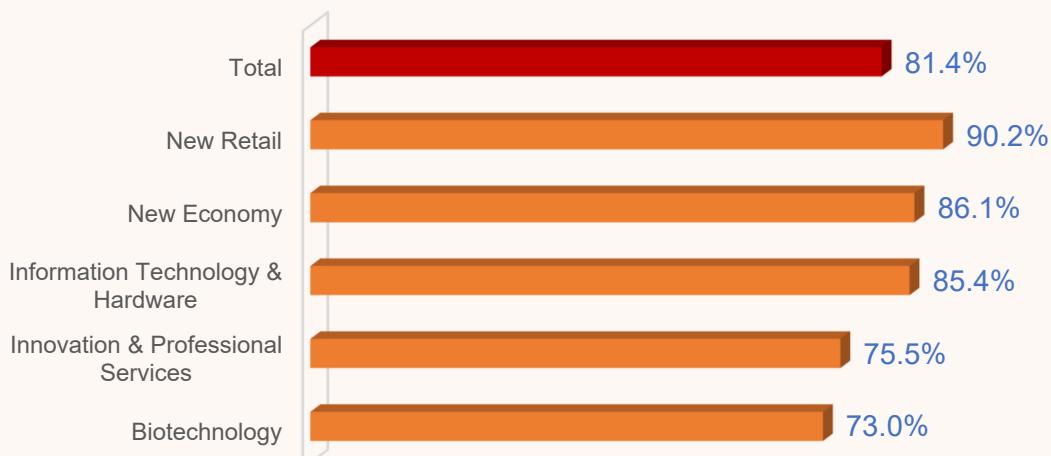


Chapter 4: Start-Up Challenges and Opportunities

81% of the respondents in the survey expressed satisfaction (a rating of 7 or above on a 10-point scale) with the start-up ecosystem in the GBA. Start-ups in the new retail sector expressed the highest level of satisfaction, with 90% of them giving a rating of 7 or above. This was followed by new economy start-ups (86%), start-ups in information technology and hardware manufacturing (85%), innovation and professional services start-ups (76%) and biotechnology start-ups (73%).

The survey found that start-ups in the GBA see a huge market and great opportunities in the GBA. Nearly 30% of respondents expressed interest in further expansion into other markets in the region. However, inadequate funding, market uncertainty and fierce competition in the bay area have made it increasingly difficult for start-ups to expand. The survey also found that over 80% of start-ups in the GBA expect to use services provided by Hong Kong in the next three years, the most popular being banking services (such as trade finance, cross-border settlement and loan servicing), followed by accounting, auditing and tax consultancy services (such as due diligence investigations), and conventions and trade exhibitions.

PROPORTION OF RESPONDENTS SATISFIED WITH THE GBA START-UP ECOSYSTEM (BY INDUSTRY)



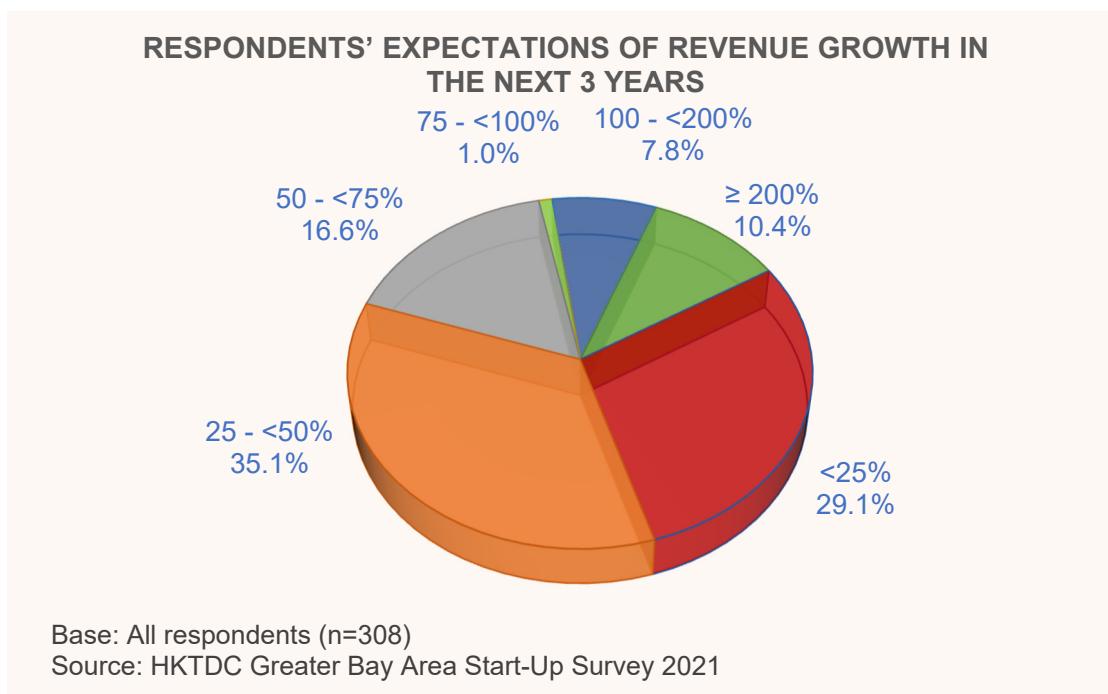
Base: All respondents (n=308)

Source: HKTDC Greater Bay Area Start-Up Survey 2021



Brimming with optimism

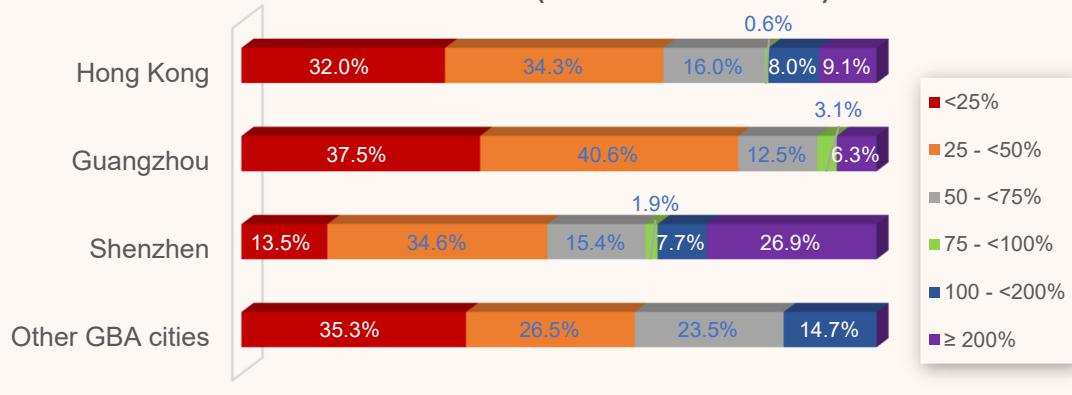
The GBA has a population of 86.17m. In recent years, the region's steady economic growth and growing middle class have fuelled consumption growth, innovation and the application of technology, as well as creating huge opportunities for start-ups. The survey results show that start-ups in the GBA are optimistic about their future prospects, with 71% of respondents expecting to see their revenue increase by 25% or more in the next three years, and another 18% expecting their revenue to more than double. Revenue growth is a major booster for start-up valuation. This fully reflects the confidence of start-ups in their future prospects as well as their development potential.



When the responses are broken down by location, it appears that start-ups with their headquarters in Shenzhen are the most optimistic about their prospects, with 35% of them expecting their revenue to increase by 100% or more in the next three years and another 17% expecting their revenue to increase by between 50% and 100%. In Hong Kong, 17% of start-ups expect their revenue to increase by over 100% in the next three years. Most others (66%) expect to see growth of not more than 50%. Similarly, most start-ups in Guangzhou (78%) expect their revenue to increase by not more than 50% in the next three years.



RESPONDENTS' EXPECTATIONS OF REVENUE GROWTH IN THE NEXT 3 YEARS (BY HEADQUARTER)

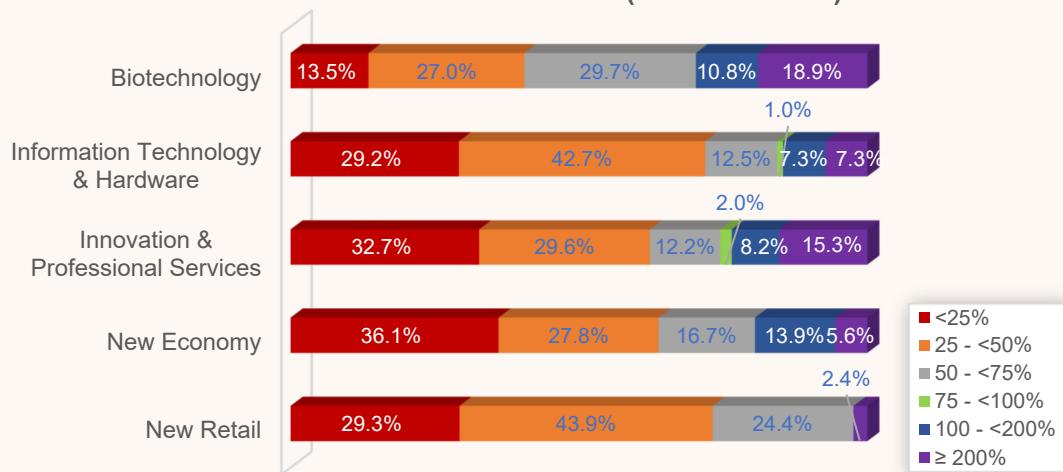


Base: All respondents (n=308)

Source: HKTDC Greater Bay Area Start-Up Survey 2021

Biotechnology is the sector that expects the fastest growth, with nearly 30% of biotech start-ups expecting their revenue to increase by 100% or more in the next three years. Due to the pandemic, countries around the world are paying more attention to the development of biotechnology. Biotechnology has become one of the fastest growing blocks and more capital is flowing to this sector, creating new opportunities for biotech start-ups. Other industries also expect to see handsome revenue growth with increases of between 25% and 75%, reflecting the tremendous development potential of innovation and technology as a whole in the GBA.

RESPONDENTS' EXPECTATIONS OF REVENUE GROWTH IN THE NEXT 3 YEARS (BY INDUSTRY)



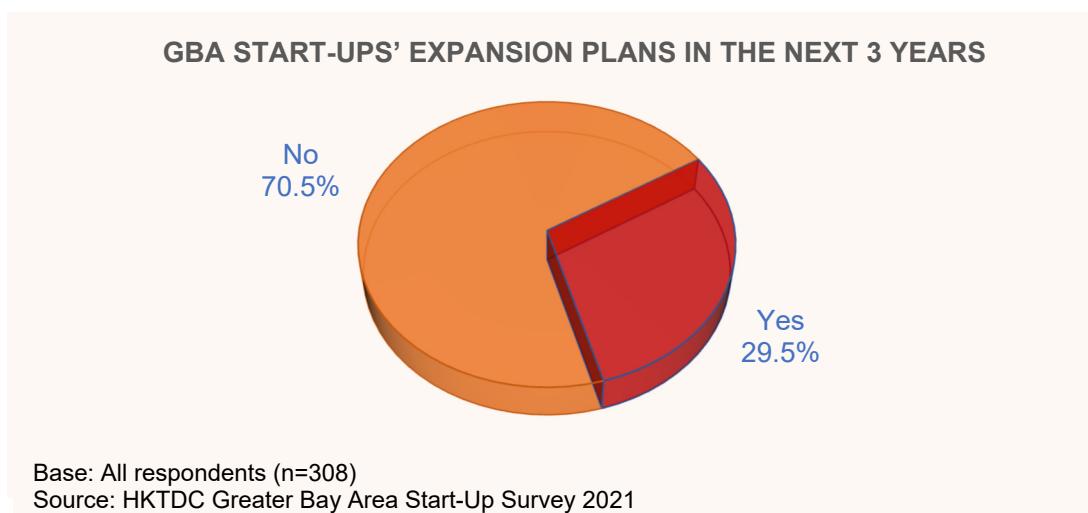
Base: All respondents (n=308)

Source: HKTDC Greater Bay Area Start-Up Survey 2021

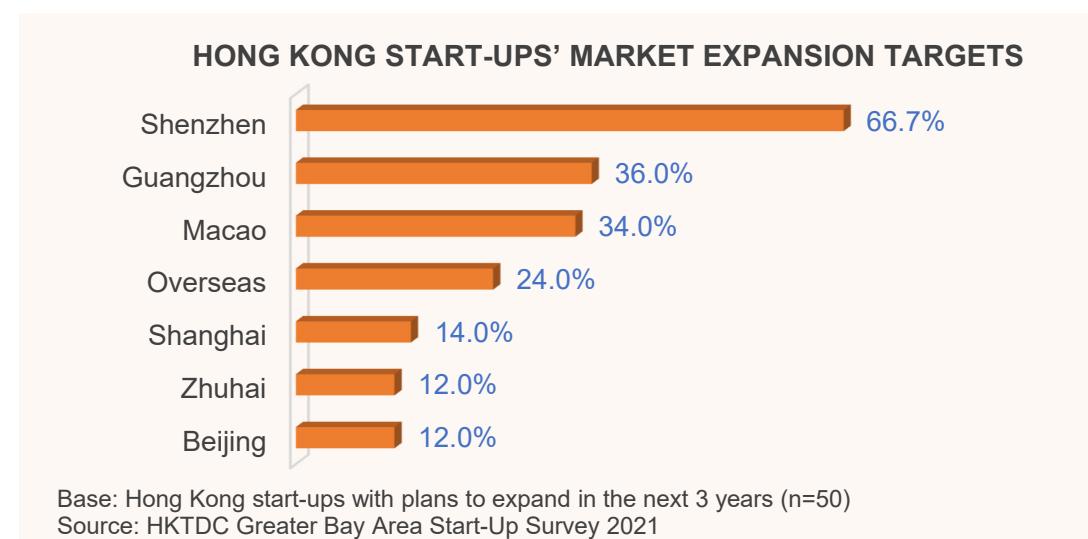


GBA expansion plans

Nearly 30% of start-ups have plans to expand their sales market, mostly to other cities in the GBA, in the next three years. For companies in the start-up stage, the GBA market is big and diverse enough to support their early development. They will only consider expanding to overseas markets when they become more mature.



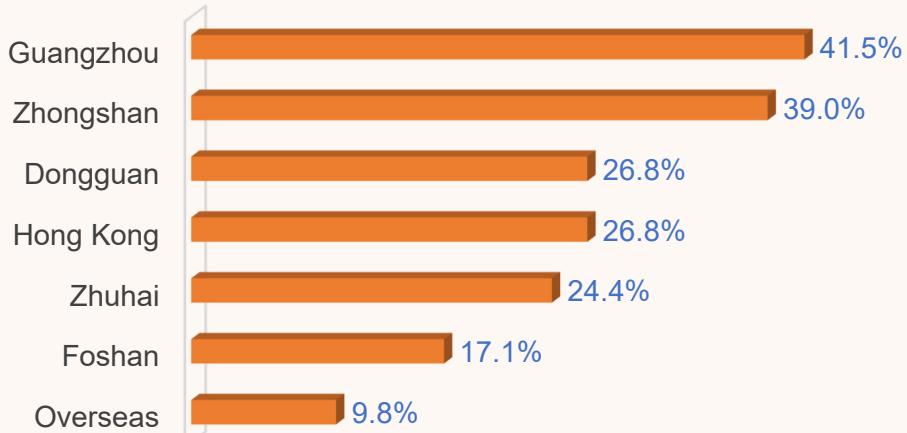
Of the GBA cities, Shenzhen (chosen by 67% of respondents), Guangzhou (36%) and Macao (34%) are most popular expansion targets for start-ups in Hong Kong. It is interesting to note that many start-ups still hope to expand their market to Macao in spite of its small size. Zidian Technology [Case Study 8] founder Timothy Cen analysed the underlying reason for this, saying: “The Macao market, though small, is actually more advantageous to start-up businesses because products can reach a wide spectrum of end-users within a short time and quickly get feedback from the market.”





Among start-ups with headquarters in the GBA mainland cities, 42% are hoping to expand to Guangzhou, 39% to Zhongshan, and 27% to both Dongguan and Hong Kong. They see Dongguan as a world-renowned manufacturing base with a well-supported industry chain and an important Chinese export base, and believe that expanding the Dongguan market would help the development of start-ups. Hong Kong, with its demographic diversity and mature consumer groups, is seen as the ideal springboard and testing ground for mainland companies hoping to venture overseas. Hong Kong is an international financial centre and excellent commercial hub. Expanding the Hong Kong market will help mainland companies absorb international funds and build international connections.

MAINLAND GBA START-UPS' MARKET EXPANSION TARGETS



Base: Mainland GBA start-ups with plans to expand in the next 3 years (n=41)
Source: HKTDC Greater Bay Area Start-Up Survey 2021



Case Study 8: Macao Entrepreneur Achieves Technology Breakthrough for Air Disinfection

Interview with Timothy Cen, Founder of Zidian Technology Co., Ltd.

The Covid-19 pandemic that ravaged the world has led to grave loss of human life in addition to mounting economic losses, putting countless businesses in difficulties. The pandemic has also generated unprecedented opportunities for businesses related to healthcare, epidemic prevention and disinfection.

Zidian Technology Co., Ltd. was founded by Timothy Cen in Macao in 2019 when he was an undergraduate student at the *University of Macau* majoring in psychology. He and his team developed an indoor aseptic maintenance device for medical use, using the *Air-ClearV®* air disinfection technique. He won an *Outstanding Young Entrepreneurs of the Guangdong-Hong Kong-Macao Greater Bay Area Award* in its first edition, as well as other awards in honour of his innovations. In an interview with *HKTDC Research*, Cen shared his experience in running a start-up business in Macao and his views on the Greater Bay Area market.

Prompted by health crises

Cen's dream of starting his business dated back to 2003 during the SARS (*Severe Acute Respiratory Syndrome*) outbreak. He said: "My uncle was a frontline doctor. The high voltage electrostatic and ozone air cleaners used at that time were both harmful to the human body to varying extents. This prompted me to explore air disinfection products with no adverse side-effects on the human body."

"After extensive market studies, I discovered that unlike air purification products, the development and production of air disinfection products have high requirements on the workshops, production staff and products themselves but the profit margin is generally low, which explained the lack of such products in the market. To my astonishment, the technology of high voltage electrostatic field remained the latest air disinfection technology used in the market, suggesting that technology in this field had hardly made any advances between the SARS and Covid-19 outbreaks."

Cen made up his mind to change this situation. After repeated efforts to develop new technologies, he finally succeeded in blazing a new path in the development of air disinfection products.

The indoor aseptic maintenance device for medical use developed by Cen and his team using an advanced air disinfection technology can reduce the size of a regular disinfection filter to under 2.2 cm deep. The ultra-thin filter can be installed in any air-conditioning system to meet medical-grade disinfection standard. It can effectively protect against germs without causing any harm to the human body. Cen said: "Unlike traditional mechanical filtration technologies that use ozone and



ultraviolet rays, ours is a kind of ozone-free instant air disinfection and cleaning technology that allows the room to be disinfected even when there are people in it.

"This new technology has won four national patents and has three international patents pending. It also holds the disinfection product permit certified by the *Guangdong Provincial Health Commission*. Our products can conduct ozone-free air disinfection round-the-clock while purifying PM2.5, virus, bacteria, nicotine and other pollutants. These are suitable for use in operating theatres, infectious disease wards, consultation rooms and other hospital units where an aseptic environment is required. They can also be used in hotel guestrooms and public places with high footfall, such as public transits, airports and schools."



Flash™ invisible air disinfection equipment.

The Macao advantage

Cen is a *University of Macau* alumnus who won the first *Outstanding Young Entrepreneurs of the Guangdong-Hong Kong-Macao Greater Bay Area Award* and several other honours. Although he majored in psychology, he was more interested in technology and innovation. During the time when he was developing the air disinfection technology, his father and grandfather who were fairly well-versed in physics gave him a good deal of useful advice. Cen is the brain-child of the R&D team of *Zidian Technology*. Every time he came up with new ideas, he would lead his team to try out new possibilities.

Cen was once faced with the choice of furthering his studies in Australia or staying put to study at the *University of Macau*. Explaining his decision to stay, he said: "The Macao government is always supportive of young people starting their business and the *University of Macau* provides them with funding support. There is a very good entrepreneurial environment here. I also wanted to stay connected with the Macao market."

In Cen's opinion, Macao has always set great store by the development of science and technology and has allocated a lot of resources to assist start-up businesses. The *Centre for Innovation and Entrepreneurship*, for example, provides assistance to *University of Macau* staff and students in transforming their innovative ideas into reality. Even people who are not *University of Macau* graduates are eligible for assistance from the *Centre*, such as participation in publicity seminars and bidding and procurement meetings as registered members of the government-funded *Macao Young Entrepreneur Incubation Centre*, so they can get in touch with potential target clients.



Timothy Cen won the Outstanding Young Entrepreneurs of the Guangdong-Hong Kong-Macao Greater Bay Area Award in its first edition in 2020.

Moreover, young entrepreneurs (aged 21-44) in Macao can apply for interest-free loans of up to M\$300,000 from the *Economic and Technological Development Bureau*. These loans have a maximum repayment period lasting up to eight years. Cen said: “There are not that many start-up businesses in Macao, which means fewer competitors. Entrepreneurs are as precious as a diamond in a heap of pearls in Macao, whereas in places like Shenzhen and Hong Kong, it is not that easy to beat other contending young entrepreneurs.”

Manufacturing base location

Cen had visited different cities in the Greater Bay Area looking for suitable manufacturing locations and business partners. Highlighting the observations he has of different GBA cities, he said: “The quality of labour varies quite a bit in Zhongshan. Land cost is high in Zhuhai because of its commitment to develop into a financial centre. Huizhou is quite far from Macao.

“Each city has its own development priorities. Some cities target tourism; some are more suitable for e-commerce and marketing; others focus on manufacturing and support production-oriented businesses.”

Zidian Technology ultimately chose Foshan as its manufacturing base. Cen said: “Foshan lies close to Guangzhou, hence its cost-performance ratio for talent and equipment is relatively high. The important thing is premises because air disinfection products have very exacting sanitation requirements and several dust-free workshops need to be built. There are many manufacturing premises for equipment in Foshan and it is relatively easy to find a suitable place.”

Today, *Zidian Technology* operates as a Macao brand that produces and assembles products on the mainland using American manufacturing standards and imported materials.



Certification boosts confidence

The Macao market, though small, is actually more advantageous to start-up businesses because products can reach a wide spectrum of end-users within a short time and quickly get feedback from the market. Cen said: "Many clients approach us directly about the efficacy of our products. Thus, we spend a lot of time, energy and resources on product certification, such as certification by the SGS (*Société Générale de Surveillance*) and local certification agencies to bolster customer and market confidence.

"Among these, the approval certificate issued by China's health supervision department can prove that our products are up to air disinfection specifications and are suitable for hospital use. In order to obtain that certificate, the manufacturing premises must be dust-free and aseptic, like hospital operating theatres, and the staff involved must pass government assessment. The premises must also be equipped with the necessary emergency and preventive facilities. Most importantly, this certificate must be renewed every four years."

On promotion strategies, Cen said he hoped the government, the business community and the academic circles would take the lead to use the products invented by innovative entrepreneurs to bolster public confidence. He said this is the only way to effectively boost development in this business.

Start-up connector

Zidian Technology has also participated in exhibitions in Hong Kong. Cen saw this as an effective platform for businesses and products to contact potential investors or manufacturing partners. Although *Zidian Technology* has yet to enter the Hong Kong market, it has already registered its trademark and patents in Hong Kong for future development. Cen has also made use of Hong Kong's banking services and thinks that its legal and financial sectors are very important for market development.

As a Macao-based start-up, Cen reckons Hong Kong should publicise more of its success stories in these endeavours. He also hopes the Hong Kong Government will simplify or improve the relevant procedures and offer suitable tax or rental relief should start-ups from Macao wish to extend their business to Hong Kong.

Future direction

Zidian Technology currently has a six-person R&D team in Macao and employs about 12 people in its production facilities in Foshan. On future development, the company still has its focus on Macao and is in talks with the government and leading businesses there. The company plans to market its products and brand to Southeast Asia over the next two years.

With regard to business expansion through financing, Cen said he has no financing plans in the short term since investors generally hope to see good short-term returns and his company is on a steady course of development.

Other than Macao, Cen had considered expanding his business to Hong Kong but had reservations. He said: "I have done some research in Hong Kong but discovered



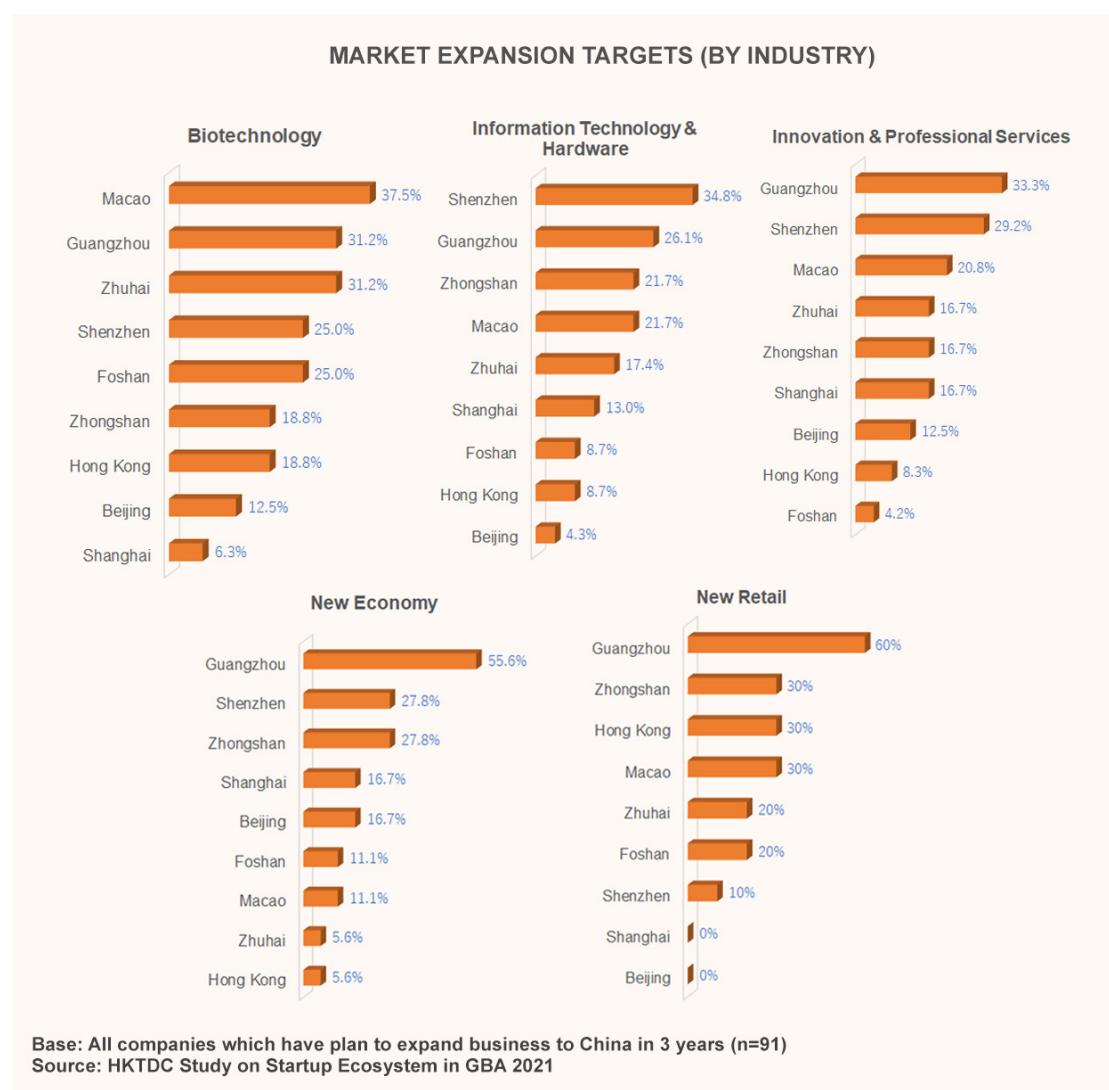
that the Hong Kong market is much more complicated than Macao's and brand competition is keen. Some leading brands in Hong Kong put a lot of emphasis on brand effect in their market promotion. Most clients and consumers may not be knowledgeable enough to distinguish between good and bad products and tend to think that heavily-publicised products are good products."

Viruses, such as *Covid-19* today and *SARS* in the past, have done varying degrees of harm to society. Cen sincerely hopes that governments and businesses in different countries will take precautions with protection of the general public and staff members in mind by extensively installing air disinfection equipment at work and in public places. He saw this as the only way to effectively eliminate viruses in the environment and stave off the next pandemic.



Among start-ups with plans to expand their sales market, more than half in the new economy and new retail sectors are optimistic about the development potential of the Guangzhou market. According to China's customs statistics, Guangzhou's total cross-border e-commerce import-export value was around RMB36.7 billion in 2020, a growth of 120% year-on-year. This suggests that there is ample room for growth in Guangzhou for the new economy and new retail sectors, such as e-commerce and technology retailing.

35% of start-ups in information technology and hardware manufacturing have plans to open up the Shenzhen market. As an important global base of electronic information industry clusters and the place of origin of electronic product prototypes with all kinds of upstream and downstream enterprises, Shenzhen has nurtured large numbers of emerging enterprises related to electronics manufacturing.



It is worth noting that among those start-ups with plans to expand their sales market, over 60% of biotech companies plan to tap the market in Zhuhai or Macao. Zhuhai's



pharmaceutical manufacturing sector is still relatively small in scale, but the city has successfully built high-tech industrial parks in recent years, using its low cost of doing business and cost of living to attract outside enterprises and talent to undertake pharmaceutical research and development and production. For example, the Jinwan biopharmaceutical base in Zhuhai has become one of the three major biopharma bases in Guangdong province and is home to several famous pharmaceutical companies. The *Overall Plan for the Development of the Guangdong-Macao In-depth Co-operation Zone in Hengqin*, which specifies biomedicine as one of the key directions for the development of co-operation between Macao and Hengqin, has generated huge opportunities for biotech companies.

Inadequate funding

About 70% of the respondents, however, have no plans to expand business in the next three years. The main reasons are inadequate funding (cited by 56% of respondents), market uncertainty (31%) and fierce market competition (31%). Many start-ups maintained that they would achieve much faster business growth if they had the necessary funding support. Due to fierce market competition, investment institutions are keener to invest in more mature start-ups and are more inclined to choose projects with a higher technology content for higher returns. For this reason, smaller start-ups have difficulty raising funds for market expansion. During an in-depth interview, Song Liguo, founder of Guangzhou-based iTingbaby Technology [Case Study 9], said: "When we started our Pre-A round financing, we encountered many difficulties in spite of our efforts to contact investors because our core products cannot generate immediate profits or have good sales figures."

BARRIERS TO BUSINESS EXPANSION IN GBA



Base: All respondents with no plans to expand business in GBA (n=233)
Source: HKTDC Greater Bay Area Start-Up Survey 2021



Case Study 9: Smart Technology in Maternal and Child Health

Interview with Song Liguo, Founder of Guangzhou iTingbaby Technology Co. Ltd.

Song Liguo had worked in various medical science and technology institutions before he spotted a gap in the market in the lack of medical products catering to the crucial 1,000 days encompassing pregnancy and the first two years of motherhood. With this in mind, he established *iTingbaby Technology Co. Ltd.* in Guangzhou, in February 2017, to develop medical products related to gynaecology and pediatrics. Song hoped that with the help of smart technology a new generation of parents might enjoy a healthier, happier and more relaxed time during pregnancy and early parenting. In this interview, he talks about the challenges he encountered in starting his business in Guangzhou, as well as his overseas deployments.

A safe and sound environment

The *iTingbaby* team has less than 10 members, who together have many years of experience in the development of medical devices and apps, and of marketing and operations. The company currently has two core product ranges, namely its smart MSI (mother sound intervention) system and its premature baby monitoring products.

“The smart MSI system creates for premature babies the sound inside the mother’s body,” said Song. “Babies have basic sensitivity to sound by 24 weeks of their growth. After this, the sound they are most familiar with inside the womb is their mother’s heartbeat. But premature babies are put in incubators after they leave the womb early. Not being able to hear their mother makes them feel anxious and unsafe. Amir Lahav, assistant professor of pediatrics at *Harvard University Medical School*, said in a research paper published in 2015 that the simulation of maternal heartbeat or voice in the incubator can stimulate the premature baby’s hearing, as well as cerebral cortex development.”

Song said *iTingbaby*’s MSI system is a brand-new solution. “We have developed a commercial solution – from collection of the mother’s voice, to sound synthesis, to transmission, to hospital. The system retains the sound environment of the womb or simulates similar sounds to stimulate the hearing and speech development of premature babies. Since the MSI system is not a medical device, it is exempted from clinical testing for registration with the *National Medical Products Administration*. However, clinical testing is required for future additions of artificial intelligence (AI) technology.”



Smart MSI system (medical edition).

The MSI system is available in three editions. The home edition is for use at home; the medical edition is for use in neonatal wards in hospitals; and the business edition is geared towards partner companies. The system is now produced in Guangzhou.

At the same time, *iTingbaby* is also developing premature birth monitoring products using AI. Song said pregnant women's anxiety tends to increase as their due date approaches. The products being developed by *iTingbaby* will allow expectant mothers to monitor the conditions of their foetus at home through analysis of the electromyogram indices of uterine contraction, allowing them to judge and monitor their labour status and allay any anxieties. "We intend to start from expectant mothers with premature tendencies and eventually extend our project to cover regular pregnancy monitoring," he added. "Since premature monitoring products are classified as medical devices, clinical testing is required, thus prolonging the development cycle."

Song attaches great importance to intellectual property because of the innovative nature of *iTingbaby*'s products. He said the company has 27 patents pending, including 14 invention patents. Among these, five invention patents have been granted.

Targeting public hospitals

The company has set its sights on both corporate (hospital) and individual (consumer) customers, but has found that as a start-up business the investment costs required to target the consumer market are too high. Song said: "Since we have established good connections with medical device agents and hospitals, we have confidence in opening up the corporate market. As for the consumer market, we have consulted different mother groups and obtained a lot of valuable opinions. They also like our products very much. We began venturing into the consumer market in July 2019. With the high costs of marketing and operations, advertising and market education, the investment return was barely satisfactory, which was why we halted our consumer market business in August 2020."

Public hospitals are major clients of *iTingbaby* today. Song explained: "We have Grade 3A general hospitals and prefectural- and city-level public hospitals as our target clients. These hospitals have strong neonatal departments and are well-equipped. They receive pregnant women with symptoms of premature birth from all parts of the country. We will start co-operating with private hospitals after our premature birth monitoring products have been upgraded for regular monitoring."



Success factors

Song believes there are three factors behind each successful start-up. He said:

“First, the spirit of entrepreneurship. This means being able to immediately evaluate the situation and make corrections when we encounter difficulties. For example, after finding out that the consumer market is not performing as expected, we switched our attention to the corporate market. Second, ample funds. Scientific research companies involve huge investment but a longer payback period than other businesses. Sufficient operating funding is needed to support development. Third, talent recruitment. As a start-up company, we cannot afford to offer high salaries and employ too many people. Our staff may need to tread beyond their familiar waters.”

It is understood that *iTingbaby* has indeed come across difficulties in financing. Song said: “Our first round of financing came from a Chinese American. When we started our Pre-A round of financing, we encountered many difficulties in spite of our efforts to contact investors because our core products cannot generate immediate profits or have good sales figures.”

Guangzhou’s start-up atmosphere

Song chose Guangzhou to start his business not just because it is his home but also because as one of the core cities in the Guangdong-Hong Kong-Macao Greater Bay Area (GBA), the government of Guangzhou offers substantial support to entrepreneurs. “Our R&D investment cost is higher than in other businesses,” he said. “Fortunately, as an accredited ‘high-tech enterprise’ in Guangdong, we are eligible for funding support and reduction of office rental. However, we still hope the government would increase tax subsidies for entrepreneurs. In the *Nansha Industrial Park* where we are located, business inspections and entrepreneurship counselling are conducted on a quarterly basis to promote exchanges and contact between businesses.”

What is the atmosphere for innovation and entrepreneurship in other GBA cities? In Song’s opinion: “Objectively speaking, Shenzhen’s atmosphere is indeed better than that of Guangzhou. I have worked in Shenzhen before. There are many energetic and motivated young people and foreigners there and they are all working hard to come up with new ideas and make new trials. They are also willing to take up new challenges. Dongguan and Foshan have a strong manufacturing base but there is nothing special about their innovation atmosphere. Hengqin in Zhuhai has a lot of co-operation with Macao and has supportive policies for innovation. It has also nurtured a number of successful companies in the healthcare field.”

Domestic foothold first

Faced with an ageing population and the need to improve the nation’s demographic structure, the Chinese government has introduced many measures to encourage childbirth. For example, in May of this year it announced a new policy of allowing couples to have up to three children and in July it issued guidelines on further “reducing the burden of homework” and “after-school tutoring” for students during

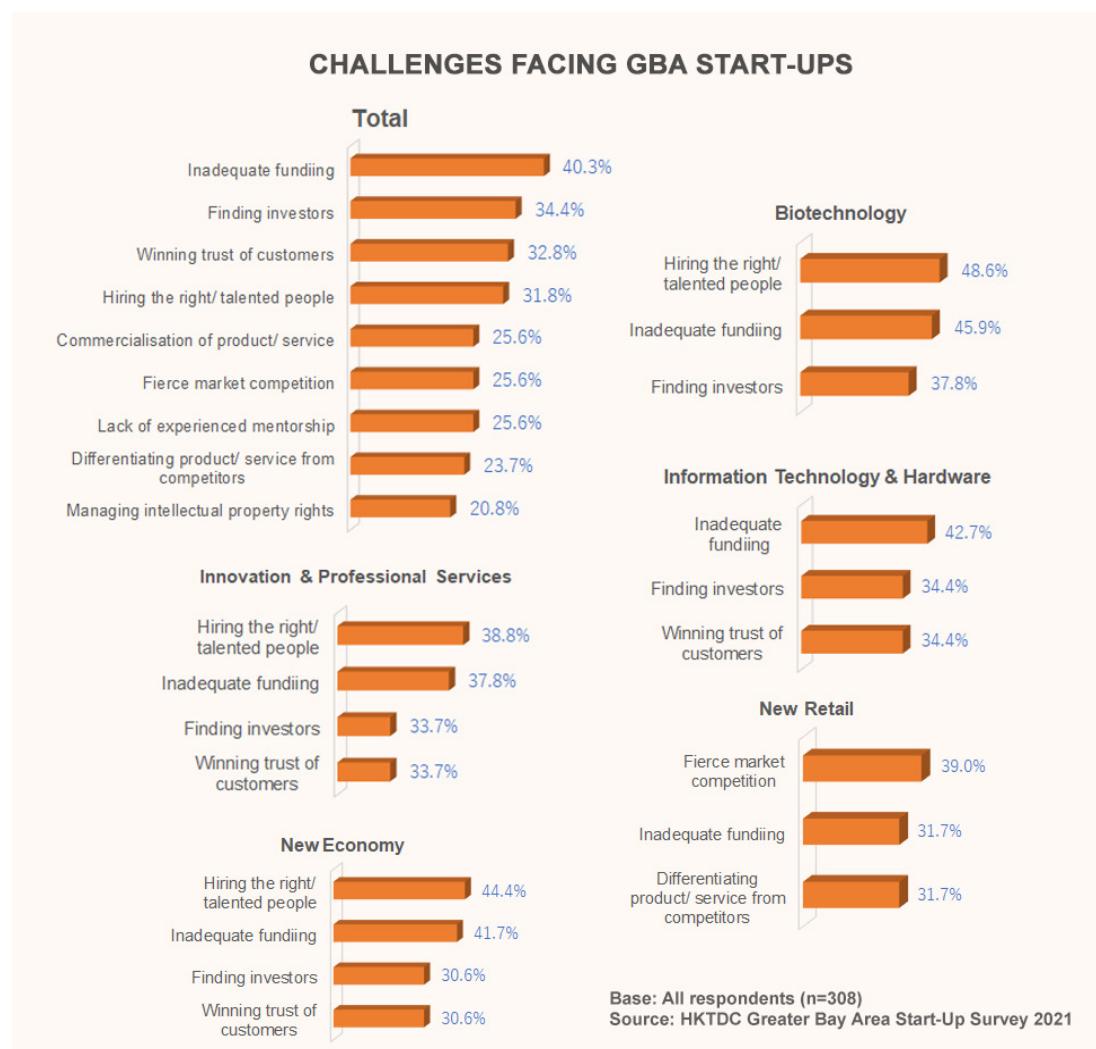


compulsory education years. Song is optimistic about China's baby and maternity market. He said: "The number of newborns on the mainland is still falling, but all items of family expenditure on babies are on the rise. We are now focusing on the China market because hospitals in the west encourage mothers to go to the neonatal ward to hold their premature babies and the sense of mother-child separation is less serious. Mainland hospitals are very careful about the monitoring of premature babies. Through our MSI system, babies can hear their mother's heartbeat or voice even in their incubators, which helps stimulate the healthy development of their brain."

On plans for overseas expansion, Song said: "Our partners in Italy, Sweden, the US and Brazil will help us open up the local markets, but we still need to apply for different certifications in the light of funding and local medical device regulations. These include the CE mark in Europe, USFDA (*United States Food and Drug Administration*) certification in the US, and ANVISA (*Brazilian Health Regulatory Agency*) certification in Brazil."

For Southeast Asia, Song said he hoped to open up these local markets through Hong Kong. "Many of Hong Kong's certification authorities have strong influence in Southeast Asia," he commented. "Being able to sell our products in Hong Kong will be of help to us in venturing into the Southeast Asian market. We hoped that mainland-registered medical products will be able to directly gain accreditation in Hong Kong or can be sold in Hong Kong after simple record-filing procedures, and vice versa, because certification of medical products takes time and is costly, giving start-ups a lot of pressure. It will be great news for start-ups if a pilot scheme can be launched in the GBA to align the laws and regulations governing medical products."

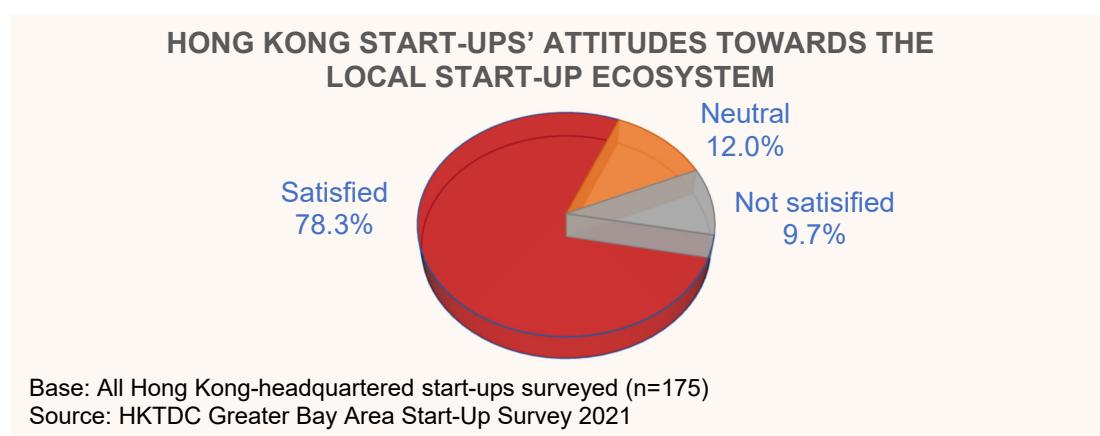
The study discovered some of the difficulties and challenges facing start-ups in the GBA. The biggest challenge they face is inadequate funding – a factor cited by 40% of respondents. The next most important is the difficulty of finding investors (cited by 34%) and the difficulty in winning the trust of customers (33%). It is worth noting that start-ups in industries of a higher professional level such as biotechnology, innovation and professional services, and the new economy all found it difficult to hire the right people. For the new retail sector, the biggest difficulty lies not so much in product manufacturing as in the commercialisation of products (a factor cited by 32% of respondents in that sector). Only by developing an innovative product positioning and sales model can start-ups stand a chance of securing a solid foothold in this competitive market (39%).



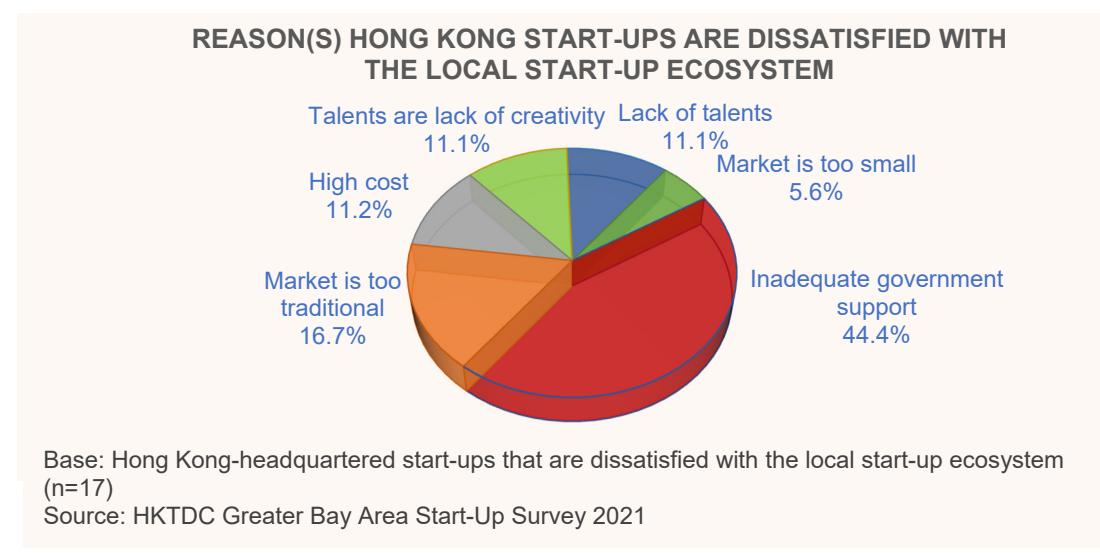


Government support

Among the Hong Kong-based start-ups surveyed, about 10% said Hong Kong's start-up ecosystem still has room for improvement. Over 40% of respondents held that government support is inadequate and hoped to see further support from the government, especially in the promotion of technology application and in policy review and legislation. Giving an example of this, one respondent said: "Many countries have already legislated on legalising the use of fully autonomous vehicles. Under Hong Kong's current legal framework, however, unmanned vehicles cannot be registered or licensed."



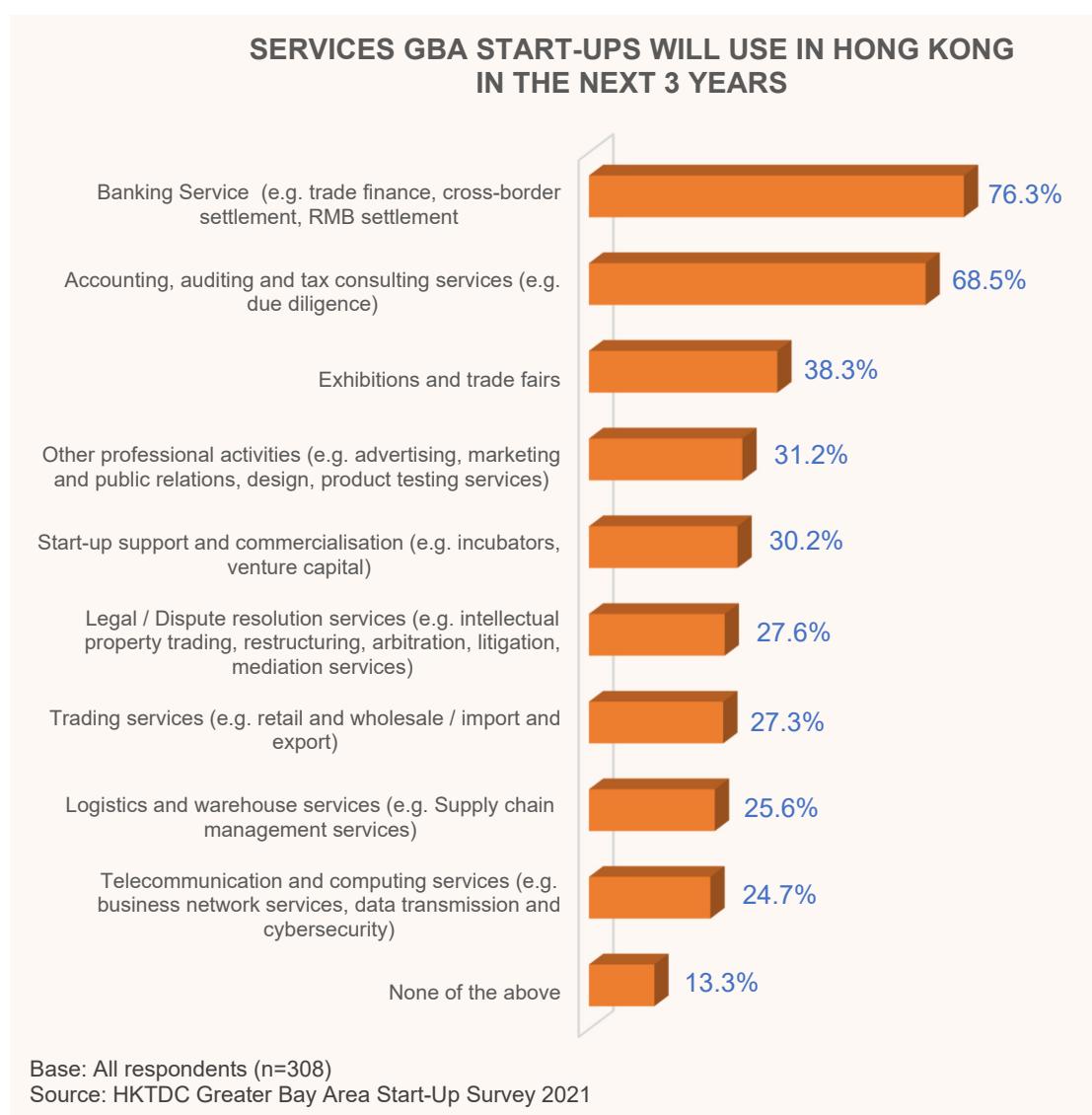
Meanwhile, some companies pointed to a lack of creativity in Hong Kong's market and personnel (11% of respondents cited this), and a shortage of talent (also mentioned by 11%). Belinda Wong, manager of the *Startup China Club (Hong Kong)*, suggested that more international elements be incorporated in talent training to keep start-ups posted on developments on the mainland and overseas, saying: "This will help start-ups expand into different markets, broaden their international horizon and boost their overall competitiveness."





Internationalised services

Although Hong Kong still has room for improvement when it comes to support for start-ups and the promotion of technology application, it has obvious strengths in professional services. With Hong Kong being the commercial hub of Asia, most of its providers of professional services have knowledge and experience that complies with international practice and meets international standards and are thus able to provide local, mainland and overseas customers with high-quality and efficient services. Hong Kong provides, therefore, the ideal foothold for mainland and overseas start-ups looking to open up the Asia-Pacific market. The survey found that 76% of the respondents in the GBA anticipated using Hong Kong's banking services, such as trade finance, cross-border settlement and loan servicing, in the next three years. Another 69% said they would use accounting, auditing and tax consultancy services in Hong Kong.





About 40% of start-ups in the GBA also anticipated using Hong Kong's conventions and trade exhibition services in the next three years. Hong Kong is one of the best cities in the world for conventions, exhibitions and incentive travel, and hosts more than 100 international exhibitions and attracts over 1.6 million overseas overnight visitors for conventions, exhibitions and incentive travel each year. This provides start-ups with an ideal platform for opening up new markets, establishing connections and increasing exposure. Zidian Technology [Case Study 8] founder Timothy Cen said he had taken part in exhibitions in Hong Kong in the past. He praised Hong Kong's exhibitions as an effective platform that allows businesses and brands to get in touch with potential investors and manufacturing partners.

In an in-depth interview, vice president of the Macao Young Entrepreneur Incubation Centre [Case Study 10] Wei Lixin said: "Hong Kong, as an international business hub, has close business ties with markets in Europe, America and Southeast Asia, and many international corporations have set up offices in Hong Kong. Start-ups can therefore get in touch with overseas companies via Hong Kong." He Chang, founder of Jiale Information Technology [Case Study 4] of Guangzhou, noted that he had already set up operations in Hong Kong for future overseas co-operation, including co-operation with *Facebook*, *Instagram* and other overseas social media, saying: "Overseas companies are more familiar with the business environment in Hong Kong than they are with that in the mainland. Moreover, overseas clients generally do not need a visa to visit the city and can communicate with Hong Kong people in English. It is also easy for us to visit the city. Hong Kong is therefore an ideal bridge between mainland companies and overseas markets."



Case Study 10: Macao the Link Between China and Portugal Entrepreneurs

Interview with Wei Lixin, Vice President of Macao Young Entrepreneur Incubation Centre

The government of the Macao Special Administrative Region (SAR) has devoted great effort to promoting youth innovation and entrepreneurship over recent years. After launching the *Macao Young Entrepreneur Incubation Centre (MYEIC)* in 2015, the government officially signed an agreement with *Parafuturo de Macau Investment and Development Limited (PFM)*¹⁷ on 18 October 2017 commissioning PFM to operate the incubation centre. The *MYEIC* provides a range of up-to-date support facilities and professional services for Macao entrepreneurs or people wanting to contribute to the SAR. Wei Lixin, vice president of the *MYEIC*, shared with *HKTDC Research* the characteristics of start-ups in Macao and how Macao can leverage its advantages as a bridge between China and Portugal to help local start-ups tap into Portuguese-speaking markets.

Macao's start-up environment

The *MYEIC* adopts the resource sharing and collaboration model to provide a full range of basic facilities and professional support services for its members round the clock. The one-stop services it offers include office space, legal and accounting consultancy, entrepreneurship training, road show marketing, and investment-capital matching. As of June 2021, the incubation centre had 233 members. Currently, 54 incubation projects are in progress, most being in the technology sector (over 50%) while the rest are in the fields of culture and innovation, commercial and trade services, and medical health.

Wei explained: "As entrepreneurs encounter different challenges at different stages, the *MYEIC* offers stepwise matching services such as inviting mainland and overseas experts to the *Innovation and Entrepreneurship Think Tank* to 'examine' start-up projects, organising road shows, supporting business matching and hosting 'Dinners with CEOs' for first-time and serial entrepreneurs and those whose projects are entering the incubation phase. These activities can not only broaden the horizons of entrepreneurs but also help them keep abreast of the latest developments in different sectors." Wei added: "By offering support and assistance of various kinds, the incubation centre has created a youthful and entrepreneurial atmosphere which encourages young people to develop businesses in different sectors and help advance the country's development strategy."

¹⁷ Parafuturo de Macau Investment and Development Limited was established by the Macao Special Administrative Region government on 24 November 2015.



Activity organised by MYEIC.

Summarising the three major challenges faced by Macao start-ups, he said: "First of all, there is a shortage of labour. Macao has a population of about 680,000 and an unemployment rate that stayed at the relatively low level of 1.8% prior to the pandemic. As of August 2021, its overall unemployment rate stood at 2.8%, while the figure for local residents was 3.7%. Despite this, statistics show that the labour costs for Macao-based entrepreneurial ventures remain relatively high. Furthermore, there are not enough experienced professionals in the technology, medical, financial sectors. In the past, Macao's economic growth relied heavily on the tourist, entertainment and gaming industries and so professional personnel are in short supply, and often have to be recruited from outside. Lastly, we suffer from capital constraints. Macao is a small market and businesses have to look to other markets for growth. For start-up companies, this, coupled with the drastic contraction in tourist numbers during the pandemic, is a challenge." In view of this, the *MYEIC* is constantly looking for platforms to support Macao start-ups seeking to expand their markets.

Leveraging entrepreneurship platforms

With the support of the *Economic and Technological Development Bureau (DSEDT)* of the Macao government, the *MYEIC* proactively co-operates with its mainland counterpart. Under the auspices of mutual recognition of youth entrepreneurship projects, the Macao centre encourages Macao youths to move into the mainland incubation centre, where they will find help to start businesses on the mainland. The *MYEIC* currently collaborates with a number of youth innovation entrepreneurship bases in the nine mainland GBA cities, including *Chuang Hui Gu* (hub of creativity, innovation and entrepreneurship - cultural and creative community for young people in Guangdong, Hong Kong and Macao) and the *Guangdong-Hong Kong-Macao (International) Youth Entrepreneur Hub* in Guangzhou; the *Macao-Hengqin Youth Entrepreneurship Valley (Inno Valley)* in Zhuhai; and the *Zhongshan E-Park Entrepreneurship Base (the Guangdong-Hong Kong-Macao Youth Innovation and Entrepreneurial Cooperation Platform)* in Zhongshan.

In addition to targeting the mainland GBA market, Macao also seeks to expand the markets in Portuguese-speaking countries for start-ups taking advantage of its historic links and the shared Portuguese language. In June 2018, *PFM* signed a co-operation agreement with *Beta-i*, a well-known Portuguese incubator, whereby members of the *MYEIC* can, on the recommendation of the incubation centre, move



into *Beta-i*'s incubation base or take part in its projects. This arrangement supports young mainland and Macao entrepreneurs seeking to innovate and start businesses in Portugal. The *DSEDT* launched the *Youth Innovation and Entrepreneurship Exchange Programme of China and Portuguese-speaking Countries* as a venue for promoting interaction and exchanges among the young entrepreneurs in Macao, mainland China and Portuguese-speaking countries. The exchange programme will strengthen Macao's role as an economic and trade co-operation platform between China and Portugal and encourage young entrepreneurs to visit Portugal to learn about the local market and to identify opportunities for co-operation and development. This programme is currently on hold as a consequence of the pandemic.

PFM signed a co-operation agreement with *Hong Kong Cyberport* in 2019. Both parties pledged to share resources and advantages with entrepreneurs in incubation, and to jointly establish a platform for Hong Kong and Macao entrepreneurs to access entrepreneurship resources, build an extensive market network, and enhance business skills and knowledge. Under the agreement, the *MYEIC* nominates entrepreneurship projects with potential for the *Cyberport Creative Micro Fund (CCMF)* and *Cyberport Incubation Programme*, while *Cyberport* recommends start-ups to participate in the *MYEIC*'s incubation programme and helps their projects establish a foothold in Macao and Portuguese-speaking countries. In addition, both parties provide professional consultancy services and training in technical and business knowledge to entrepreneurs they support.

The Golden Track

Many Macao start-ups wish to tap into the mainland market. Because of the fierce competition on the mainland, the fastest and most effective way of gaining recognition is participating in start-up contests. Wei said: "Many investment institutions and international enterprises pick out start-ups with potential from contests, while entrepreneurs can communicate with other enterprises and investors and build personal networks through participating in contests." The *MYEIC* organises the *Macao Youth Innovation and Entrepreneurship Competition* every year. Winners then represent Macao in competitions on the mainland such as the *China Innovation & Entrepreneurship Competition* (organised by the *Ministry of Science and Technology*) and the *China International College Students' "Internet+" Innovation and Entrepreneurship Competition* (organised by the *Ministry of Education*).



2021 Macao Youth Innovation and Entrepreneurship Competition.



Among the awards received by projects nominated by the *MYEIC* are: the global winner of the *Create@Alibaba Cloud Startup Contest*; top 12 position in the *Fosun Protecting InnoStar Global Innovation Competition*; the gold award of the *Beijing-Tianjin-Hebei & Guangdong-Hong Kong-Macao Youth Innovation and Entrepreneurship Competition*; the gold award of the *China International College Students' "Internet+" Innovation and Entrepreneurship Competition*; and the bronze award of the *Qianhai Guangdong-Hong Kong-Macao-Taiwan Youth Innovation and Entrepreneurship Competition*.

Strengthen start-up exchanges

According to Wei, given that there are certain similarities between Hong Kong and Macao, the two cities can complement each other in fostering start-ups by taking advantage of the mainland GBA cities. “Land supply in Hong Kong and Macao is tight and the costs of human resources and operation are higher than on the mainland. This has exerted considerable pressure on start-ups. Since Hong Kong and Macao lack production capabilities while GBA mainland cities such as Shenzhen, Dongguan and Guangzhou have highly concentrated manufacturing zones, start-ups in the two SARs should focus their attention on the GBA. As the local markets in Hong Kong and Macau are small, start-ups at a certain stage of development will seek to expand their businesses into larger markets. The GBA has a population of over 80 million sharing the same language, culture and environment as Hong Kong and Macao, so it provides an ideal location for start-ups to further expand.” He added: “The scientific research base in Hong Kong universities is well developed and generates many ideas and projects with great spin-off potential. For instance, *Da-Jiang Innovations (DJI)* and *Huolala* are successful start-up companies built around innovative ideas coming out of Hong Kong universities.”

Where expanding to overseas markets is concerned, Wei pointed out that Hong Kong and Macao start-ups should take full advantage of local resources. He remarked: “Hong Kong, as an international business hub, has close business ties with markets in Europe, America and Southeast Asia, and many international corporations have set up offices in Hong Kong. Start-ups can therefore get in touch with overseas companies via Hong Kong. Meanwhile, Macao, due to its historical background, has forged close and extensive connections with Portuguese-speaking countries covering a total population of over 200 million. It plays the unique role of a commercial and trade co-operation platform between China and Portuguese-speaking countries. Depending on the nature of their projects, start-ups can choose the appropriate platform as their springboard for ‘going out’ from the GBA.”

Under the impact of *Covid-19*, many exchange activities have moved online. Wei expects that once the pandemic is over, exchanges between start-ups in Guangdong, Hong Kong and Macao will resume. When this happens, start-ups should make good use of the unique advantages of the GBA, such as lower operating costs and ample supply of technical personnel, and capitalise on the in-depth integration of the GBA to move forward.

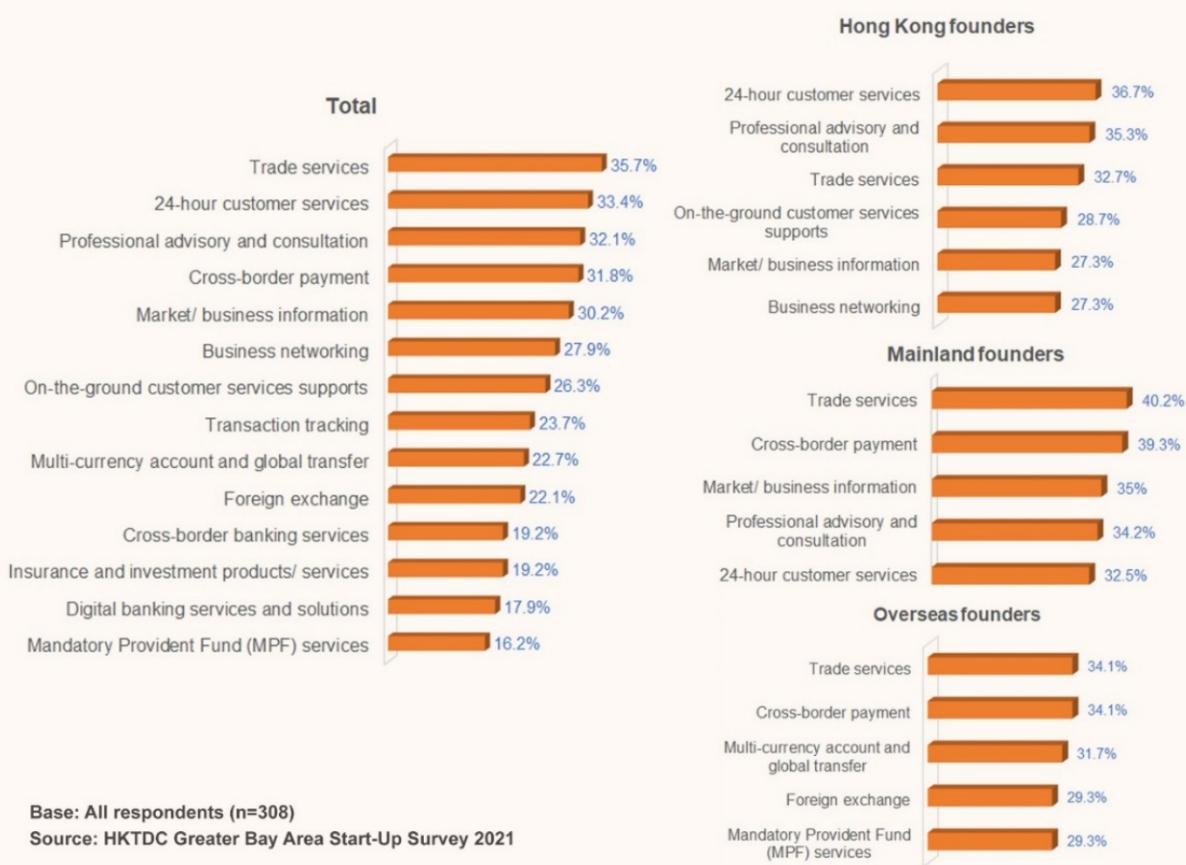


Banking services

Hong Kong is the world's biggest and most important offshore renminbi business centre and boasts an internationalised financial system and stable financial market environment. Many mainland start-ups in the GBA choose Hong Kong as their fundraising and financing platform and platform for overseas business expansion. They often use the services provided by banks in Hong Kong. The survey found that 36% of the start-ups in the GBA had used trade services provided by Hong Kong banks, including import-export financing, insurance claims and letter of guarantee. Mainland and overseas entrepreneurs have the greatest demand for this kind of service. A third of all the entrepreneurs in the survey said they hoped that banks would provide 24-hour customer service. Entrepreneurs in Hong Kong set greater store by this kind of service.

35% of entrepreneurs from Hong Kong said they needed banks to provide professional advisory and consultancy services, while entrepreneurs from the mainland and overseas used cross-border payment services more often. The survey also found that 30% of start-ups obtained timely market and business information through banks.

DEMAND OF BANKING SERVICES THAT STARTUP COMPANIES IN GBA ARE LOOKING FOR





Integrated development

Each city in the GBA has its own characteristics and advantages. Hong Kong has a sound intellectual property protection system, world-class research capability, a prudent and robust financial regulatory regime and an internationalised service industry. It is an international gateway to the mainland as well as the bridge linking the mainland and the world. However, Hong Kong and Macao have limited land resources and their manpower and operating costs are higher than in the mainland. The shortage of production premises in Hong Kong and Macao also poses pressure on start-ups. Shenzhen, Dongguan, Guangzhou and other mainland cities have mature supply chains and supporting production and scientific research facilities. Deep integration of the GBA will help start-ups in Hong Kong and Macao promote the commercialisation and application of technology more effectively. Start-ups in the mainland can also make good use of the strengths of the Hong Kong and Macao markets to open up overseas markets, push their products to international markets and find overseas investors.

Summing up the information obtained from the questionnaire survey and company interviews, one can see that start-ups in the GBA are generally happy to see the integration of the GBA and believe that the development of the GBA can bring them huge opportunities. They believe that connections between different cities in the region should be closer and that there is still room for improvement in the policy of promoting GBA integration. Suggestions put forward by start-ups include: (1) the entry policy for mainland personnel to visit Hong Kong, including the length of stay, should be relaxed and flexible arrangements should be offered to businesses to allow freer movements of personnel; (2) because the cost of living is relatively high in Hong Kong, the Hong Kong government should give greater funding support to mainland entrepreneurs in Hong Kong, such as rent concessions; (3) government agencies could give outside entrepreneurs more advisory services relating to entrepreneurship; and (4) further steps should be taken to promote the convergence of inspection and certification standards between the two places. For example, mainland registered medical products should be allowed to be sold directly on the Hong Kong market after being certified by relevant agencies or going through simple record-filing procedures in Hong Kong, and vice versa.

In short, regional co-operation in the GBA has created valuable opportunities for the development of entrepreneurship, innovation and technology in cities throughout the GBA. Hong Kong can also leverage its strengths in research and development,



internationalisation and as an international financial centre and muster the innovation resources of the GBA and countries around the world to boost the competitiveness of the start-up ecosystem.



Conclusion





Conclusion

Start-ups generate new technologies, products and services for a society, and inject fresh impetus in growing an economy. In the Guangdong-Hong Kong-Macao Greater Bay Area (GBA), the governments of various cities have tried to nurture start-ups to boost the region's competitiveness by launching different support measures and funding schemes. The survey found that start-ups were generally satisfied with the GBA's start-up ecosystem, opining that the bay area's start-up culture was vibrant, with many incubators and technology parks providing start-ups with guidance and venue support.

Despite this, a number of GBA start-ups still face challenges, including lack of funds and difficulties in seeking investors and gaining customers' trust. They called on governments to improve the mechanism incentivising start-ups and strengthen funding support, such as offering rent concessions. Governments are also urged to take the lead in procuring innovative technology products and services from start-ups to raise their profile.

In Hong Kong, innovation and technology (I&T) start-ups have been flourishing in recent years. An investment of over HK\$130 billion has been made by the government over four years to promote I&T development. According to the 2021 Policy Address, the Science Park, Hong Kong's flagship I&T incubator, is home to about 900 technology firms and start-ups in areas such as artificial intelligence, healthtech and environmental technology, and has incubated four unicorns.

In the past three years, its tenants/incubatees have raised funds amounting to HK\$33 billion. It is estimated that for every HK\$1 invested by the Hong Kong Science and Technology Parks Corporation, an external investment of HK\$13 has been attracted.

Meanwhile, Cyberport has also accommodated a number of technology companies and incubated five unicorns spanning the fields of fintech, smart living and digital entertainment. For every HK\$1 invested by Cyberport, an external investment of HK\$13 has been attracted. Over the past three years, start-ups in Cyberport have drawn an investment of over HK\$12.5 billion. In fact, Hong Kong start-ups have been continuously growing in number, now standing at 3,755, up 68.5% from 2017.

For Hong Kong's I&T industry, GBA development is creating valuable opportunities, where Hong Kong can give full play to its advantage in scientific research and internationalised professional services, as well as its strengths as a global financial



centre and a double gateway between the mainland and global market. The city can also pool the innovation resources in the GBA and worldwide to sharpen the competitive edge of its I&T start-up ecosystem.

Respondents suggested that to strengthen Hong Kong's role as a GBA start-up platform, the Hong Kong government should streamline the application procedures for start-up funding schemes, launch more 1:1 matching funds to connect start-ups with private investors and step up support measures to attract overseas venture funds to bolster the local start-up ecosystem. It is also important for the government to take the lead in procuring start-ups' innovative products and services to increase public confidence in such products and services and raise the start-ups' profile.

Meanwhile, Hong Kong exhibitions have proved an effective platform for businesses and brands to connect with potential investors and production partners. GBA start-ups can therefore consider participating in more conferences and exhibitions in Hong Kong to expand their market, develop business networks and gain more exposure.

The GBA is home to a cluster of advanced manufacturing industries, modern services and I&T companies. Among GBA cities, Hong Kong and Shenzhen are known for their outstanding scientific research capabilities, other mainland GBA cities have mature production chains in advanced manufacturing, and Macao is a bridge between start-ups in China and Portugal. Leveraging their own strengths and developing in co-ordination with each other, the different cities can certainly raise the overall competitiveness of GBA's start-up ecosystem.

On the part of Hong Kong, efforts will continue to be made to complement other GBA cities in its I&T development, with the ultimate goal of turning the city into an international I&T hub as set out in the *Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area* and the *14th Five-Year Plan*.



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