



Transforming Hong Kong Through Entrepreneurship

Second Edition



Foreword



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KPMG China

KPMG China is pleased to present the second edition of our *Transforming Hong Kong Through Entrepreneurship* report on the Hong Kong start-up landscape in collaboration with Alibaba Hong Kong Entrepreneurs Fund.

As this report goes to press, we note that Hong Kong's start-up ecosystem is going through a critical stage in its development. As it strives to become an international innovation & technology (I&T) hub, the city is actively exploring where its greatest strengths and competitive advantages lie in the context of the new economy, and how it can leverage those strengths to generate growth and opportunities.

In 2017, the Hong Kong SAR government announced four priority sectors for I&T investment: artificial intelligence, biotechnology, fintech and smart city. To spur innovation in these sectors, the government has been investing in major new research and development (R&D) facilities, supporting funding schemes for start-ups and reforming the tax code to further boost R&D. Recent changes to the listing regime for companies in emerging sectors have helped unlock capital to support new economy and broaden their funding options.

The release of the Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area (GBA) in February 2019 provides a visionary framework for the region's development as an I&T hub. As collaboration across the GBA strengthens, it will provide new opportunities, incentives, and funding opportunities for start-ups.

However, policy changes alone will not be sufficient to drive Hong Kong's development into a dynamic and vibrant start-up ecosystem. This journey requires entrepreneurs, corporates, academics, and the general public to fully embrace change and take stake in the city's future. This especially means investing in education and the development of local talent while doing more to change existing attitudes and nurture an entrepreneurial mindset among the next generation.

Through this study, we aim to encourage stakeholders in the public and private sectors to jointly address the current gaps that pose challenges to the development of the entrepreneurial ecosystem. Only through working together to focus on Hong Kong's long-term development can we make a lasting impact on the economy and society at large.

We hope that this report provides you with valuable insights and we welcome the opportunity to discuss these findings further.



Cindy Chow
Executive Director
Alibaba
Hong Kong
Entrepreneurs Fund

Alibaba Hong Kong Entrepreneurs Fund

At Alibaba, entrepreneurship is at the core of the company's values. We support KPMG China on this study of Hong Kong's entrepreneurial landscape, which is now in its second year.

Through the report's findings, we can monitor the development of innovation, technology and entrepreneurship in Hong Kong. The survey shows that the city's start-up ecosystem is approaching a crucial point where it will become dynamic and vibrant.

Fintech and e-commerce ranked as the strongest sectors for innovation in the study. Our cohesion with these two areas allows us to provide a solid network, resources, and advice to our portfolio companies in these areas – our unique contribution to the Hong Kong start-ups working with Alibaba Entrepreneurs Fund.

This year, we also examine fundraising in the city, pinpointing how much was raised and which sectors are receiving funding. Fundraising is critical for the growth of the city's start-up ecosystem – the study aims to determine where Hong Kong's fundraising market stands.

We have also identified key areas where government, trade associations, and corporates can improve their engagement with start-ups. Some of these areas include updating their procurement policies and being more open to start-ups by testing their products or running a proof of concept.

Alibaba Entrepreneurs Fund will continue embarking on different initiatives to bring more corporates and public at large into the start-up ecosystem. Our fund is well connected with key stakeholders in Hong Kong's start-up community, and together, we are shaping new innovations, rendering Hong Kong an innovation and technology hub.

We believe a well-oiled, deeply rooted culture of entrepreneurship will move Hong Kong's economy and society forward. We hope our findings provide you with valuable insights and we welcome the opportunity to discuss the report further.

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About the study

The second edition of the *Transforming Hong Kong Through Entrepreneurship* study examines the development of Hong Kong's start-up ecosystem, identifies gaps that need addressing to help drive further progress, and provides recommendations to further enhance the city's start-up landscape.

The study is based on surveys of 393 Hong Kong-based entrepreneurs and students, interviews with key opinion leaders, and analysis of venture capital funding directed at Hong Kong start-ups.

This year's study introduces the Hong Kong Entrepreneurship Development Index capturing entrepreneur and student perceptions on the current and future state of Hong Kong's entrepreneurial ecosystem. It also summarises the current state of development in four sectors identified by the Hong Kong SAR government as priority areas: artificial intelligence, biotechnology, fintech and smart city.

The Hong Kong Entrepreneurship Development Index builds on the analytical framework of last year's study – which emphasised that a strong sense of purpose and sufficient support of capabilities are both essential to drive entrepreneurship and build a robust, vibrant and sustainable start-up ecosystem.

Survey methodology

Two concurrent online surveys of 101 entrepreneurs and 292 university students were conducted from January to March 2019.

Survey demographics

Entrepreneurs

Position

-  86% founders
-  14% start-up employees

Venture stage

-  28% early stage
-  49% growth stage
-  21% mature stage
-  2% unspecified

Gender

-  83% male
-  15% female
-  2% unspecified

Students

Degree program

-  82% undergraduate
-  18% postgraduate

Major

-  56% business/commerce/economics
-  30% STEAM
-  14% arts/humanities/social sciences

Gender

-  44% male
-  53% female
-  3% unspecified

Notes: "early stage" is defined as "up to prototyping" in the survey questionnaire; "growth stage" is defined as "rollout/early growth"; and "mature" stage is defined as "expansion/maturity".

STEAM = Science, Technology, Engineering, Art and Applied Mathematics

To get a broader range of student opinion, this year's student survey polled a wide sample of undergraduate and postgraduate students in Hong Kong. In comparison, last year's study focused on applicants from student entrepreneurship programmes.

Both entrepreneurs and students answered a series of questions assessing their opinions on purpose, ambition and entrepreneurial mindset; entrepreneur capabilities; and the ecosystem as a whole. They were also allowed to provide open-ended comments on how the landscape could be further improved.

Hong Kong Entrepreneurship Development Index

Index scores for both entrepreneurs and students are calculated based on ten contributing factors: five for purpose and five for capabilities.

For purpose, contributing factors include the following:

 **Entrepreneurs and students:** risk acceptance, opportunity perception, community support, start-up skills, and ambition

For capabilities, contributing factors differ slightly for entrepreneurs and students, as follows:

 **Entrepreneurs:** human capital support, support infrastructure, technological readiness, access to capital and regulatory environment

 **Students:** human capital support, support infrastructure, technological readiness, access to capital, and Hong Kong as a start-up location

Each factor was scored from 0 to 5 (0 = least vibrant; 5 = most vibrant) reflecting the survey findings. In some cases, the specific survey questions differed between entrepreneurs and students – for example, “ambition” for entrepreneurs is measured by financial ambition, while for students it is measured by their ambition to start a business.

The overall scores for purpose and capabilities were calculated based on the averages of the mentioned factors. All five factors for purpose received equal weighting for the index score. For capability factors, access to capital and human capital support were given increased weighting in this year's report to reflect their importance to improve start-up capabilities.

Venture capital analysis

In addition to the survey, Hong Kong Entrepreneurship Development Index, and face-to-face interviews, the study also examines venture capital investment in Hong Kong-based start-ups for the previous six financial years (April 2013 through March 2019) using data provided to KPMG China by Alibaba Hong Kong Entrepreneurs Fund, Cyberport, Hong Kong Science and Technology Park, Pitchbook and other sources. Data calculations include total capital invested, number of deals, public sector and private sector investment, and breakdown by industry sector.

Face-to-face interviews

Key opinion leaders (KOLs) interviewed for the study include start-up founders, venture capital executives, government leaders, start-up incubators, and academics. A full list of interviewees can be found in the Acknowledgements section on page 66.

Executive summary

Approach

Hong Kong has made steady progress in the past year in its journey to develop a dynamic and vibrant start-up ecosystem.

The 2018 study noted that entrepreneurs require both a strong sense of purpose and strong capabilities to build a dynamic and vibrant start-up landscape. The Hong Kong Entrepreneurship Development Index, new to this year's study, builds on the key themes from last year to provide a clearer view on where the Hong Kong ecosystem is on its journey towards vibrancy.

The index uses ten factors to assess the start-up landscape, determined by intrinsic factors that help give entrepreneurs a sense of purpose and external capabilities that the ecosystem offers. Scores for each factor are calculated based on the results of a survey of 101 entrepreneurs in Hong Kong-based start-ups and 292 university students enrolled in local degree programs. Separate measures are captured for early, growth and mature stage start-ups as well as overall performance.

The study also provides an analysis of venture capital (VC) funding directed at Hong Kong-based start-ups to better understand long-term trends in capital invested, deal count and the public-private split of funding. Additionally, it engages key leaders in government, academia and industry for their perspectives and potential solutions to key challenges that start-ups face.



Photo: Alibaba Hong Kong Entrepreneurs Fund

Key findings

This year's *Transforming Hong Kong Through Entrepreneurship* study finds that Hong Kong entrepreneurs are ambitious about the long-term growth prospects of their companies, are increasingly looking to expand their businesses outside of Hong Kong, and are making better use of available support services. However, growth may be constrained if support is not better targeted to the needs of start-ups as they progress from early to growth stage. In addition, more needs to be done to ensure that founders and those interested in working for start-ups receive sufficient support from family, friends and the general community.

More entrepreneurs surveyed agree Hong Kong is a dynamic and vibrant start-up location compared with last year, but additional targeted support for growth stage ventures and emerging sectors is needed

A higher proportion of entrepreneurs surveyed (70 percent) agree Hong Kong is a dynamic and vibrant start-up location this year, up from 56 percent in 2018. There are, however, notable differences between how entrepreneurs at different venture stages rate the city's start-up landscape – for example, 86 percent of early stage entrepreneurs agree Hong Kong has a dynamic and vibrant start-up ecosystem, compared to 59 percent of growth stage entrepreneurs.

The study also highlights differences in how entrepreneurs rated Hong Kong's position as an innovation hub in key sectors. Respondents were more likely to consider Hong Kong as an innovation hub for the fintech sector compared to artificial intelligence, biotechnology or smart city, suggesting the latter sectors need more targeted support. More than two-thirds of entrepreneurs polled (67 percent) agree Hong Kong is well-positioned as a fintech innovation hub, compared with less than half who agree the same for the other three sectors.

Students rank Hong Kong as their most preferred place to start a business, but this may shift by 2025 as mainland China's tech hubs continue to develop

Among Hong Kong students polled, 50 percent currently rank Hong Kong as their preferred place in which to start a business – reflecting the perceived vibrancy of Hong Kong's start-up ecosystem among the younger generation. This is expected to shift by 2025, however – with various cities in mainland China cited as students' preferred destinations. Hong Kong drops to sixth place in the rankings by 2025, behind Singapore and other locations in Asia. The findings highlight the perceived importance of the mainland China market to students' future business aspirations.

Entrepreneurs are ambitious about long-term sales growth and target markets, but results point to a gap in community support

The study suggests that entrepreneurs are ambitious about the long-term growth prospects for their ventures, albeit from a relatively low starting point. 30 percent of entrepreneurs surveyed expect to have sales of more than HKD 100 million by 2025, compared with 3 percent who predict they will reach the same figure within the next three years.

Entrepreneurs are also looking outside of Hong Kong – particularly to mainland China – to grow their businesses. They expect share of revenues from mainland China to be 33 percent within three years' time compared with 20 percent now.

Entrepreneurs are also showing a similarly high level of risk tolerance compared with last year, with 87 percent of those polled agreeing they are willing to invest a lot of time and money in something that might yield a high return but might also fail - on par with 86 percent last year.

Despite these positive signs, there continue to be gaps in the level of support that current entrepreneurs or students interested in starting a business receive from their families. Only 21 percent of entrepreneurs and 16 percent of students surveyed agree that parents in Hong Kong are happy to encourage their children to start a company. Meanwhile, less than half of entrepreneurs surveyed (46 percent) agree that running your own business is a well-respected career path in Hong Kong.

Hong Kong's competitive advantages are shifting, while cost of doing business remains a key challenge

Entrepreneurs consider the ease of doing business to be Hong Kong's major competitive advantage. However, the city's geographic location is expected to become the key advantage within the next three years. Meanwhile, 70 percent of entrepreneurs surveyed identify cost of doing business as a top challenge, a trend which is expected to continue in the near future.

Start-ups expect to increase their use of formal funding sources, but more education is still needed to improve access to funding

Currently, 70 percent of entrepreneurs surveyed use their personal savings to fund their business. This is expected to change, with 80 percent of those surveyed expecting to be using venture capital (VC) in three years' time compared with 20 percent at present. Similarly, more entrepreneurs expect to use other formal funding sources such as bank loans, business angels, crowd funding, government funding and private equity in three years' time compared to now.

Analysis of VC investment over the past six years highlights a 20-fold increase in capital directed at Hong Kong-based start-ups. Average deal size for private VC investments increased more than 35-fold within the same period. The findings suggest Hong Kong's VC ecosystem is maturing and that priority innovation & technology focus areas including artificial intelligence, biotechnology, fintech and smart city are gaining a greater proportion of the total capital invested.

Use of support services is increasing, but gaps in effectiveness pose a risk to future vibrancy as start-ups move from early stage to growth stage

Overall, entrepreneurs are making better use of support services, such as co-working spaces, pitching competitions and mentoring, compared with a year ago. However, the use and the effectiveness of these services tended to be higher for early stage start-ups as compared to growth stage and mature stage, suggesting a need for differentiated services targeted to post-prototype stage companies.

The talent picture is improving for Hong Kong start-ups, but more should be done to cultivate local talent and develop an entrepreneurial mindset

In some respects, the talent picture for Hong Kong start-ups is improving: 51 percent of entrepreneurs polled say they can attract and recruit the right talent to start a business, up from 29 percent last year.

However, the study points to gaps that still need to be addressed. Less than half (44 percent) of entrepreneurs surveyed agree it is easy to find staff who have an entrepreneurial mindset – unchanged from last year.

To help address current gaps, the study reflects that more could be done to promote the development of Science, Technology, Engineering, Art and Applied Mathematics (STEAM) in Hong Kong, with 38 percent of entrepreneurs surveyed agreeing there is sufficient support in this area.

Next steps

To enable Hong Kong to continue to improve its entrepreneurial ecosystem, our recommendations include the following:

- Both government and the business community should expand offerings to better support growth stage and mature stage start-ups
- Founders should prioritise sourcing formal funding by elevating their financial ambition, accelerating global market entry and engaging mentors throughout the lifecycle
- International private equity and venture capital firms should utilise changes to profit tax exemptions announced for Hong Kong, and the government should continue to promote these exemptions as well as the other benefits Hong Kong offers as a regional fund management centre
- All stakeholders should further focus on enabling open data, technology transfer and commercialisation of research in the priority sectors to support Hong Kong's digital transformation
- Hong Kong should better leverage the Greater Bay Area as a logical and accessible talent pool
- As founders build technology start-ups, they should ensure they are also building a people business that enables growth
- Government agencies, corporates and other industry players should better educate the wider community on the irreplaceable value of start-ups

Please see the recommendations chapter on page 56 of this report for further details.

The Hong Kong Entrepreneurship Development Index

Evaluating the present and future state of Hong Kong’s entrepreneurial ecosystem



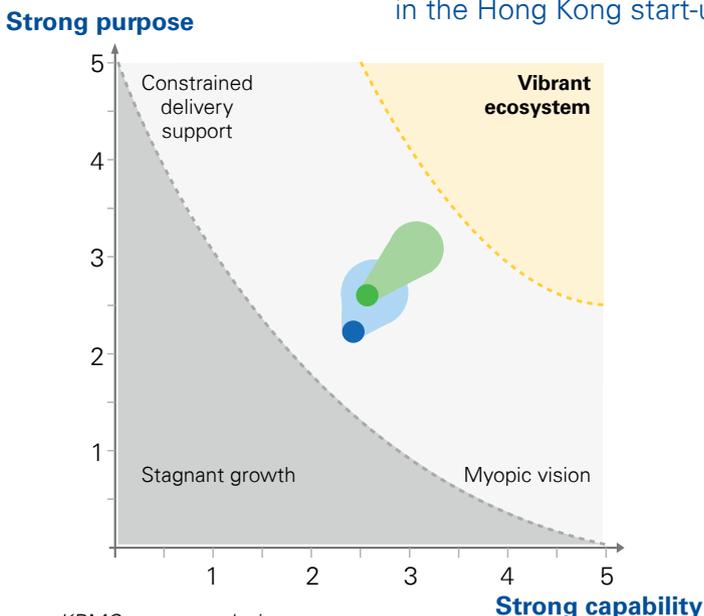
As noted in last year’s study, a vibrant entrepreneurial ecosystem requires both a strong sense of purpose and strong capabilities. Innovative ideas are best commercialised in the right environment and with the necessary support. Meanwhile, an ecosystem that has strong capabilities but lacks purpose will struggle to sustain innovation and drive the economy forward.

This year’s study takes the analysis of Hong Kong’s ecosystem a step further with the introduction of the Hong Kong Entrepreneurship Development Index. The index tracks the current perceptions of entrepreneurs and students for both purpose and capabilities. Using these measurements, it estimates Hong Kong’s current position as well as future direction on the journey towards a vibrant start-up ecosystem.

The calculated index scores for entrepreneurs and students show that Hong Kong’s start-up ecosystem is at a critical juncture. Actions in the next few years will determine whether it will develop into a “vibrant ecosystem” (see Figure 1).

Figure 1: Hong Kong’s entrepreneurial landscape: the purpose vs. capability matrix

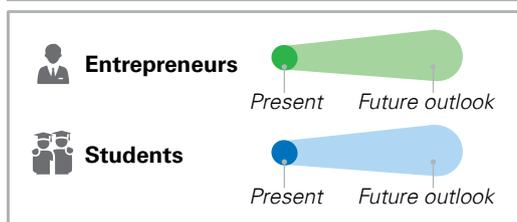
Overall entrepreneur and student perception of purpose and capability in the Hong Kong start-up landscape



Source: KPMG survey analysis

Entrepreneurs	Present state	Future outlook
Purpose	2.60	3.27
Capabilities	2.63	3.13
Students	Present state	Future outlook
Purpose	2.36	2.61
Capabilities	2.49	2.58

Note on scores: 0 = least vibrant; 5 = most vibrant





For the ten contributing factors (see Figure 2), a higher score shows relative maturity, while a lower score shows a potential gap highlighting the need for corrective action.

Within the purpose category, entrepreneurs are strongest on risk acceptance (4.36/5) and opportunity perception (3.32/5), but self-rate comparatively lower on financial ambition (0.17/5) and community support (1.04/5).

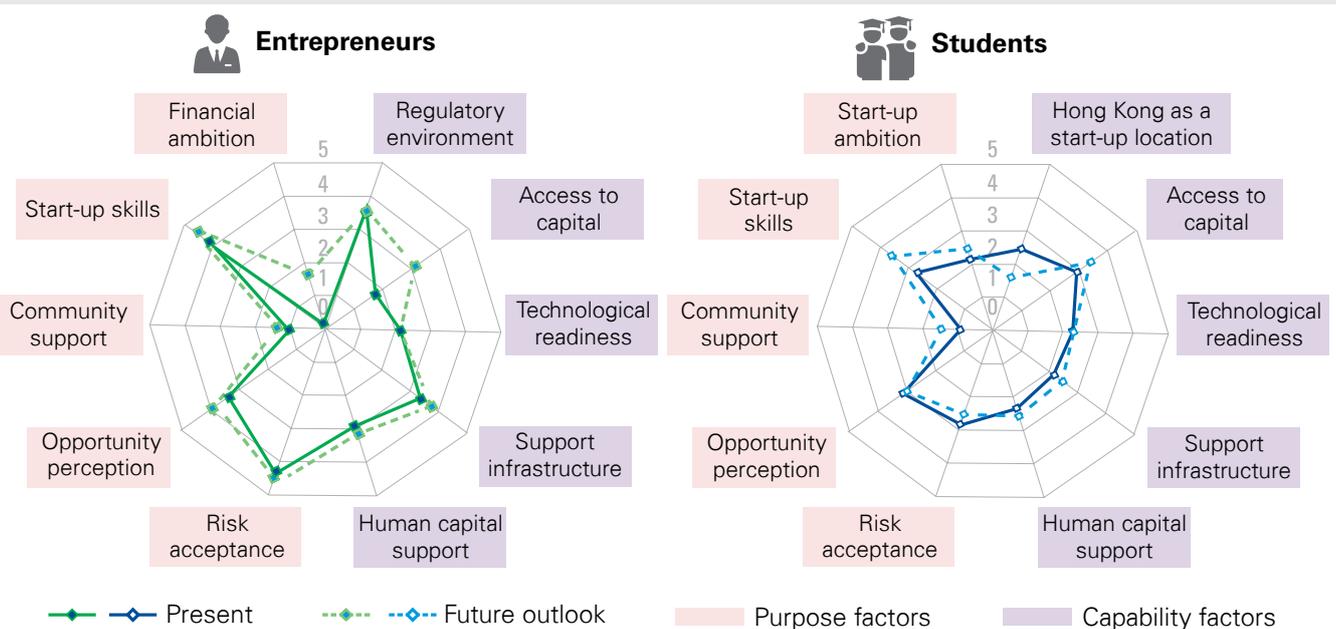
With regards to capabilities, entrepreneurs highly rate their own start-up skills (4.11/5), Hong Kong’s regulatory environment (3.56/5), and support infrastructure (3.38/5) but perceive gaps in access to capital (1.75/5). At the same time, entrepreneurs’ future perceptions for all ten factors show improvement compared to the present.

Students’ highest self ratings with regards to purpose are in opportunity perception (3.1/5) and risk acceptance (2.86/5). Key development areas highlighted include community support (0.90/5) and start-up ambition (2.11/5).

Under capabilities, student perceptions of access to capital (2.91/5) and start-up skills (2.86) were relatively high, but below average on other factors such as support infrastructure (2.16/5), human capital support (2.35/5) and technological readiness (2.29/5).

“Our Hong Kong Entrepreneurship Development Index suggests that Hong Kong has an opportunity to significantly improve its entrepreneurial ecosystem by focusing efforts on community support, ambition and access to capital,” says Irene Chu, Partner and Head of New Economy and Life Sciences, Hong Kong for KPMG China.

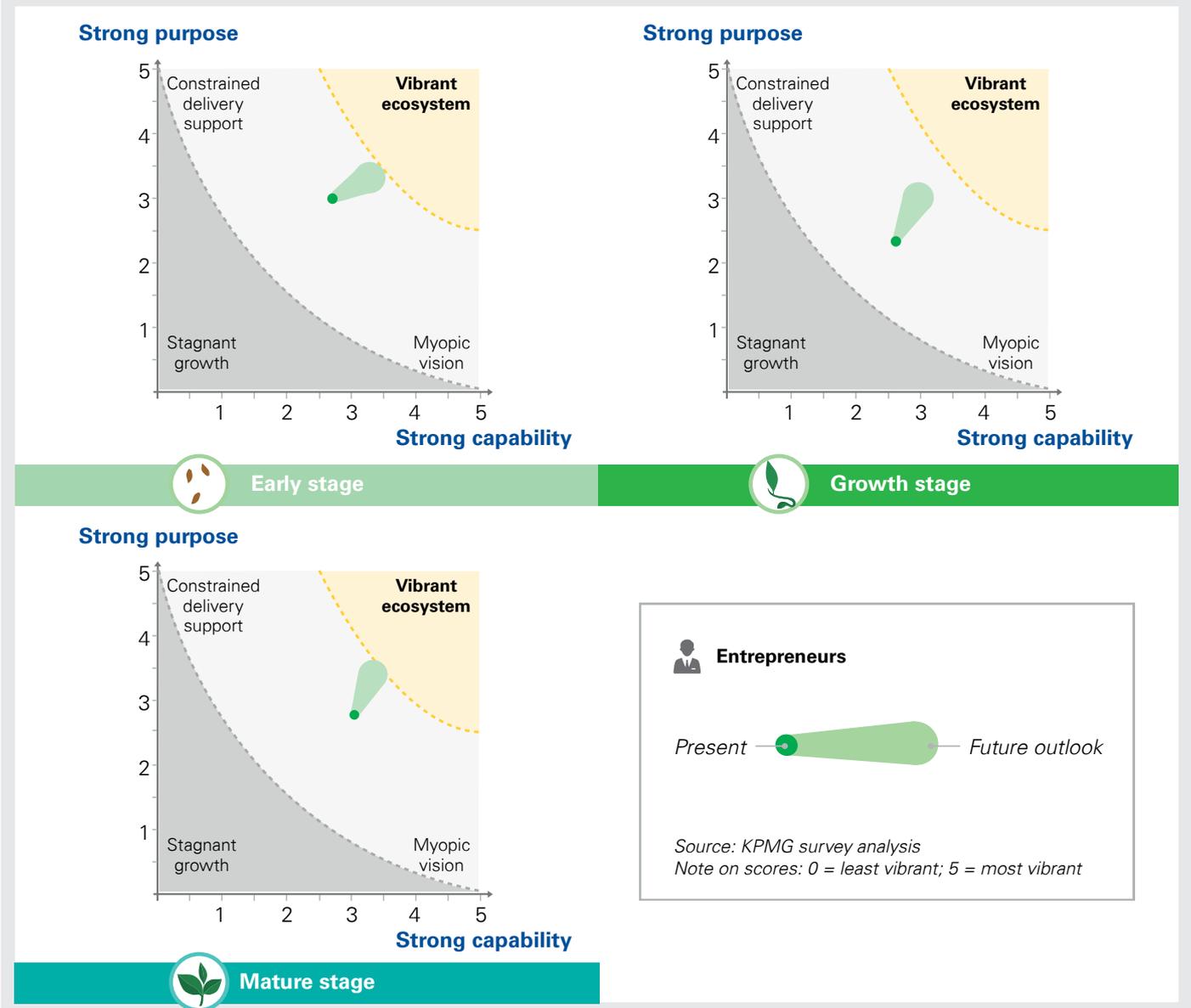
Figure 2: Assessing key contributing factors to Hong Kong’s start-up landscape



Source: KPMG survey analysis
 Note on scores: 0 = least vibrant; 5 = most vibrant

A deeper look into the entrepreneur data by venture stage shows a positive outlook for early stage and mature stage companies. It also highlights the need to further develop the ecosystem to support growth stage ventures (see Figure 3). Specific areas where capabilities could be improved for growth stage companies are further examined in the survey results (please see the survey findings section of this report starting on page 14 for more details).

Figure 3: Assessing Hong Kong’s start-up landscape by venture stage





Survey findings

Ecosystem

Hong Kong has made progress on its journey towards building a dynamic and vibrant start-up ecosystem, with the landscape maturing in some areas. However, there is a risk that future growth may be constrained if support is not better targeted. In particular, the survey findings highlight the need to refocus efforts to benefit start-ups in the growth stage.

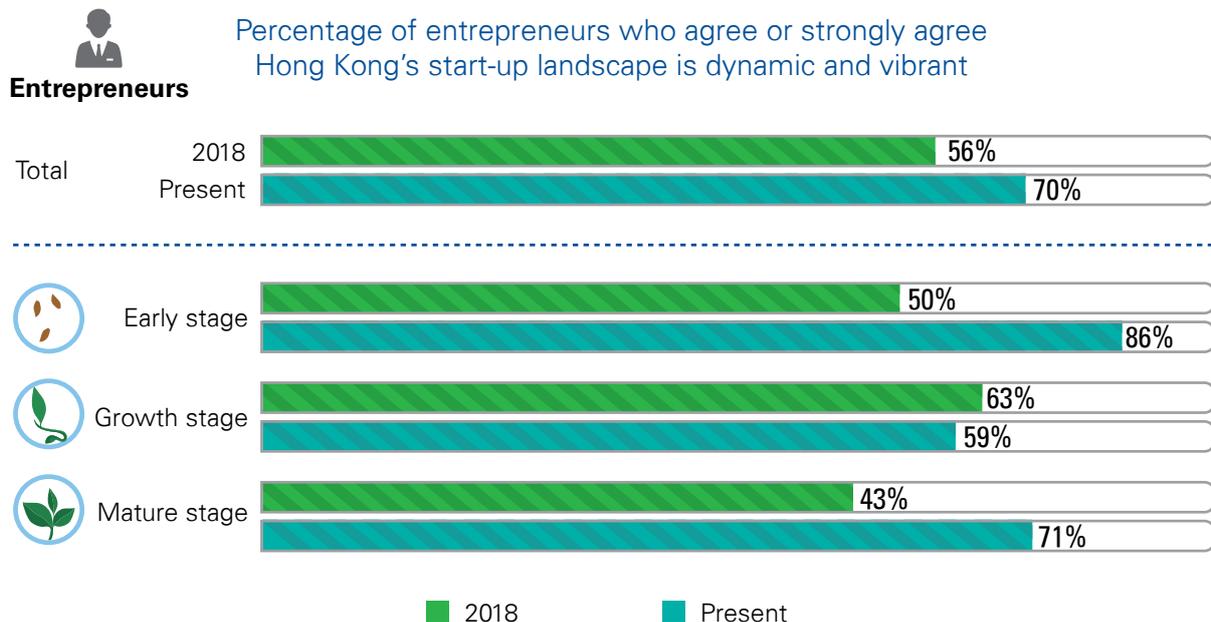
Ventures at all stages must be supported if Hong Kong is to be a vibrant start-up location

70 percent of entrepreneurs surveyed agree that Hong Kong’s start-up landscape is dynamic and vibrant, 14 percentage points more than in last year’s survey (See Figure 4).

There is, however, a significant contrast between how entrepreneurs at different venture stages rate the city as a place in which to start a business. 86 percent of entrepreneurs at early stage start-ups surveyed agree Hong Kong’s start-up ecosystem is dynamic and vibrant, 36 percentage points more than in last year’s study. 59 percent of growth stage companies feel the same way, 4 percent fewer than last year. Meanwhile, 71 percent of mature stage start-ups agree with the statement, but the figure was still 15 percentage points behind early stage. The findings suggest that taking steps to provide capabilities for start-ups of all growth stages will be critical if Hong Kong is to retain its vibrancy.



Figure 4: Vibrancy of Hong Kong’s start-up ecosystem



Source: KPMG survey analysis



Ricky Yin-To Chiu
CEO, Phase Scientific International

A healthy corporate ecosystem cannot be homogenous - it requires businesses of all stages in place. This means balancing focus beyond just pure start-ups and actively attracting mature stage businesses



Ricky Yin-To Chiu, CEO of Phase Scientific International, a Hong Kong-based biotechnology start-up, articulates this point: “A healthy corporate ecosystem cannot be homogenous,” he says. “It requires businesses of all stages in place. This means balancing focus beyond just pure start-ups and actively attracting mature stage businesses in the identified growth sectors to compliment the ecosystem.”

Fintech ranks as Hong Kong’s strongest innovation sector with other areas requiring more support

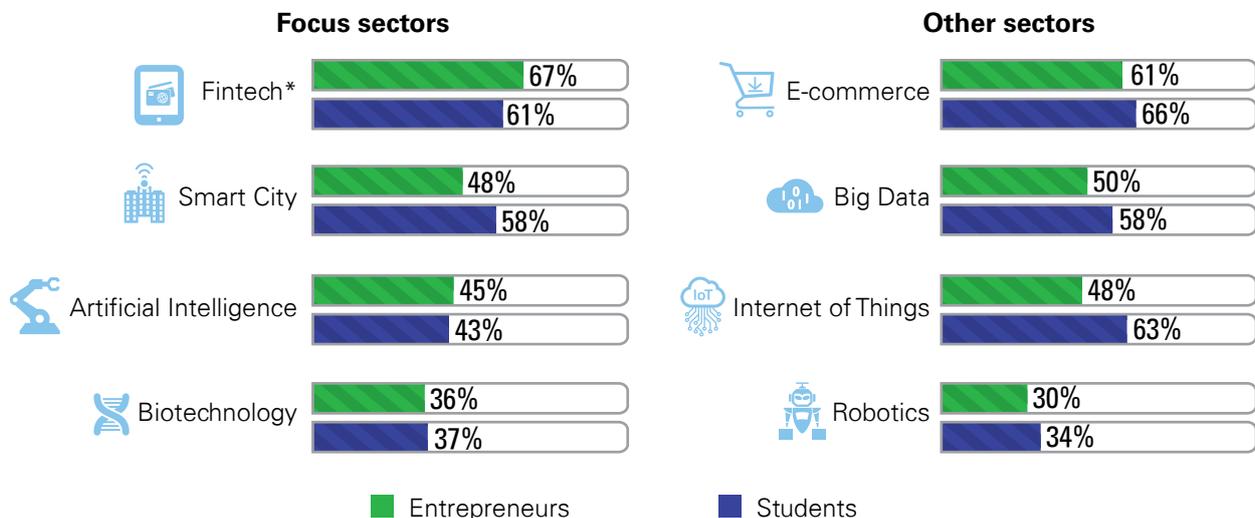
The survey asked entrepreneurs and students whether they agree Hong Kong is well-positioned to be an innovation hub in a number of emerging technology areas. The results suggest a need for continued effort to drive growth across all of the government’s four key innovation sectors outlined in the Hong Kong budget and the Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area (GBA Outline Development Plan): fintech, smart city, artificial intelligence (AI) and biotechnology.

It is unsurprising that fintech appears to be the most vibrant among these sectors, with 67 percent of entrepreneurs and 61 percent of students surveyed agreeing Hong Kong is well-positioned as a fintech innovation hub (see Figure 5).

For the others, opinion was more divided: 48 percent of entrepreneurs polled agree Hong Kong was well-positioned for smart city innovation; 45 percent say the city is an innovation hub for AI and 36 percent say the same for biotechnology. Notably, more entrepreneurs polled see Hong Kong as well-positioned to be an innovation hub in e-commerce and internet of things (IoT) as compared to AI and biotechnology, even though the latter two are identified as priority innovation and technology (I&T) development areas.

Figure 5: Hong Kong’s positioning as an innovation hub

Percentage of respondents who agree or strongly agree Hong Kong is well positioned to be an innovation hub for each category



Source: KPMG survey analysis
*Fintech category includes blockchain, regtech and insurtech

There is also a marked difference in opinion among entrepreneurs at different venture stages on this topic. A greater percentage of entrepreneurs at early stage start-ups agree that Hong Kong is an innovation hub for various emerging technologies, compared with those in the growth and mature stages. This gap is most pronounced in the biotechnology sector, where 61 percent of entrepreneurs at early stage companies agree Hong Kong is an innovation hub for biotechnology, but only 16 percent at growth stage companies and 38 percent at mature stage start-ups feel the same way.

Chiu of Phase Scientific International offers a potential explanation for this trend: “The biotech ecosystem is over-populated with early stage start-ups and does not have the growth stage and major corporate players in the market needed for a vibrant ecosystem,” he says. “As Hong Kong rapidly transitions from seed to growth, forward planning is required now to ensure the capability and infrastructure needed is in place to support it.”

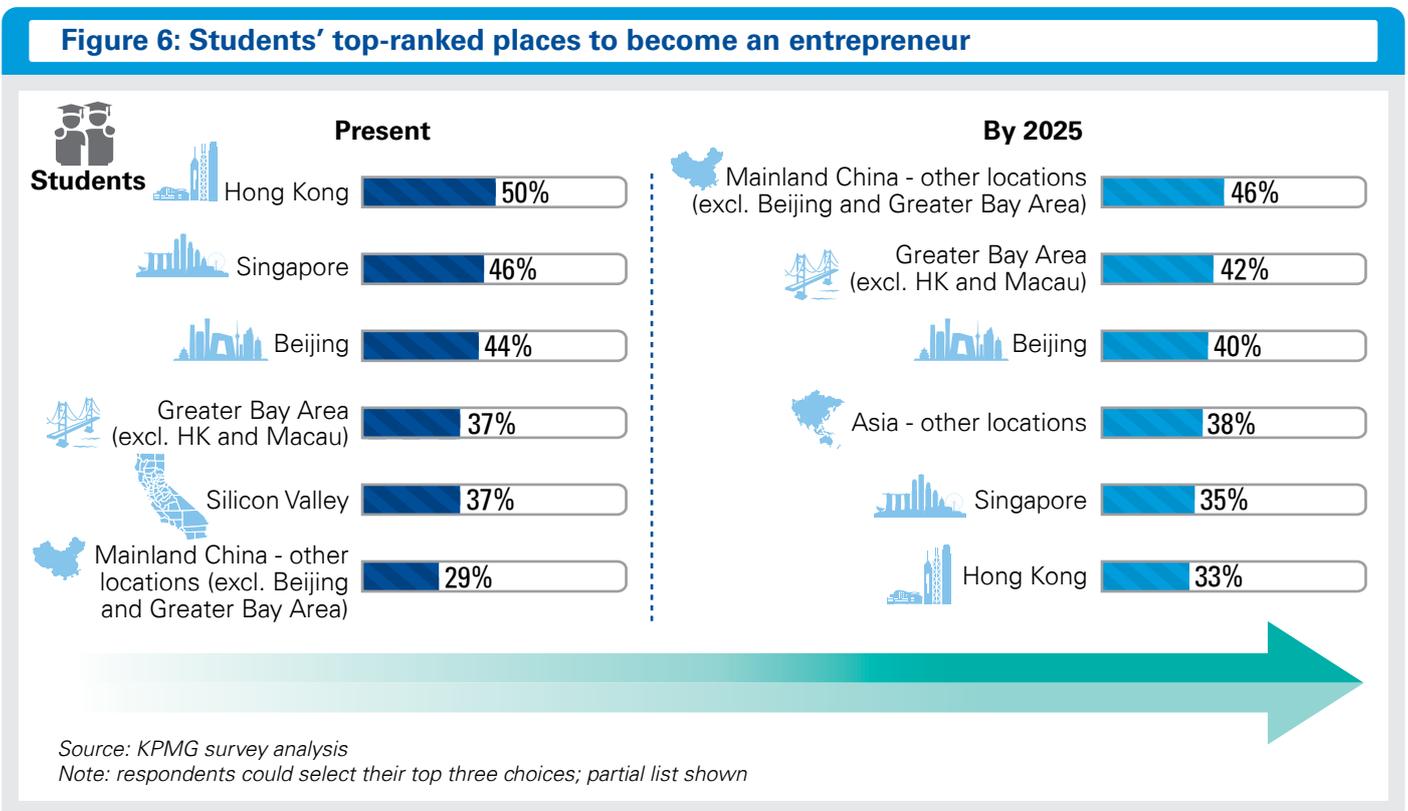


Hong Kong students choose Hong Kong as their preferred place to start a business, but this is expected to change by 2025

Among students polled, 50 percent currently rank Hong Kong as their preferred place in which to start a business. Singapore and Beijing currently rank second and third on the list with 46 and 44 percent respectively (See Figure 6).

This preference is expected to shift by 2025, however, with locations in mainland China claiming the top three spots. In fifth place was Singapore, with 35 percent of students rating it as a preferred place in which to start a business, followed by Hong Kong with 33 percent. Silicon Valley’s rating also dropped, with 21 percent rating it as a preferred place to start a business by 2025, compared to 37 percent at present.

Figure 6: Students’ top-ranked places to become an entrepreneur



Peter Yan
 CEO, Cyberport

Government and businesses should work together more closely to leverage Hong Kong’s key strengths to further enhance its position as a start-up hub

One student respondent commented that the plentiful resources, huge market and cutting-edge technology available in mainland China would be deciding factors to start a business there as opposed to Hong Kong. Another was attracted to mainland China by the larger market size, as well as perceived easier access to funding and higher level of support for start-ups.

Peter Yan, CEO of Cyberport, says government and businesses should work together more closely to leverage on Hong Kong’s key strengths to further enhance its position as a start-up hub. “All parties within the ecosystem need to adopt a forward-looking strategy and develop a vision as to what Hong Kong wants to be in the future,” Yan says.



Purpose

Purpose is defined as the vision, ambition and mindset to drive innovation. Entrepreneurs with a strong sense of purpose question the way things operate in the existing environment, identify issues that need addressing and come up with innovative new solutions without waiting for others to supply answers. To realise their full potential, the study suggests a need for further changes to make founding or joining a start-up a more well-respected career path. The presence of more local role models that entrepreneurs at different growth stages can relate to may be an important element to drive this change.

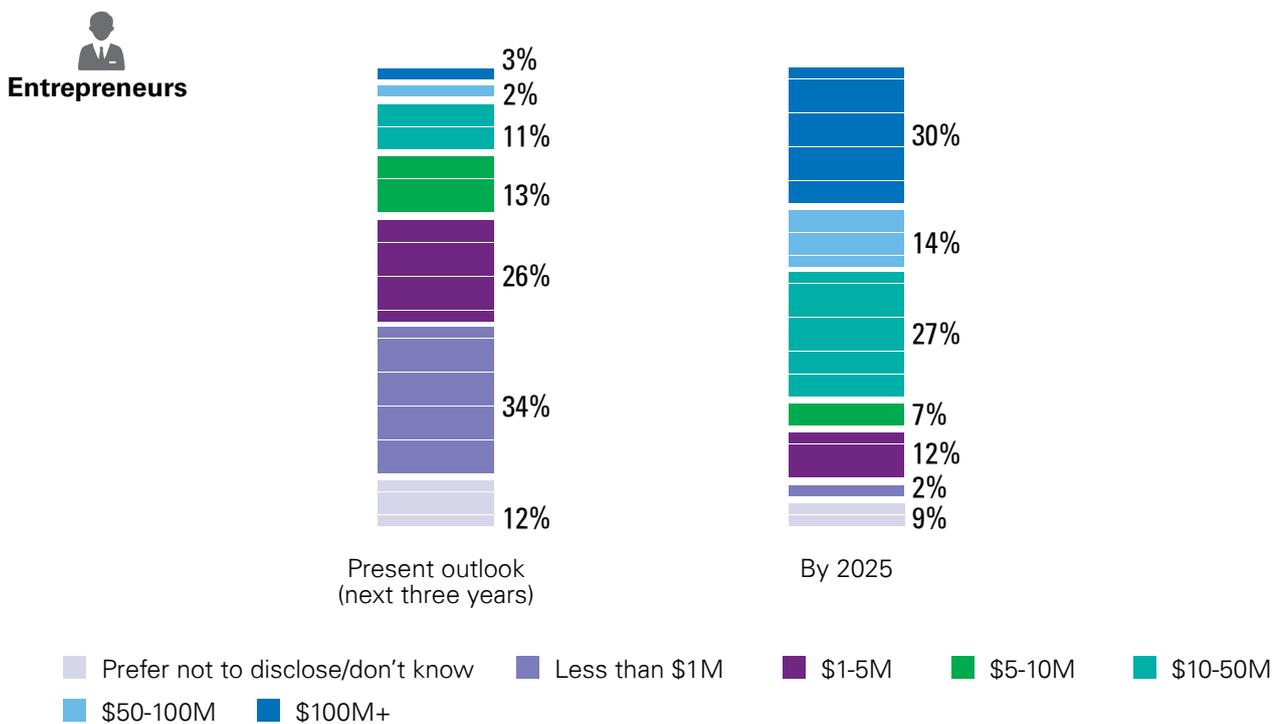
Entrepreneurs are ambitious about long-term sales growth and target markets

The survey suggests that Hong Kong entrepreneurs are ambitious about the long-term growth prospects of their companies.

While 3 percent of entrepreneurs surveyed expect to have annual sales of more than HKD 100 million in three years' time, this figure increases to 30 percent when entrepreneurs are asked to predict their sales income by 2025 (see Figure 7).

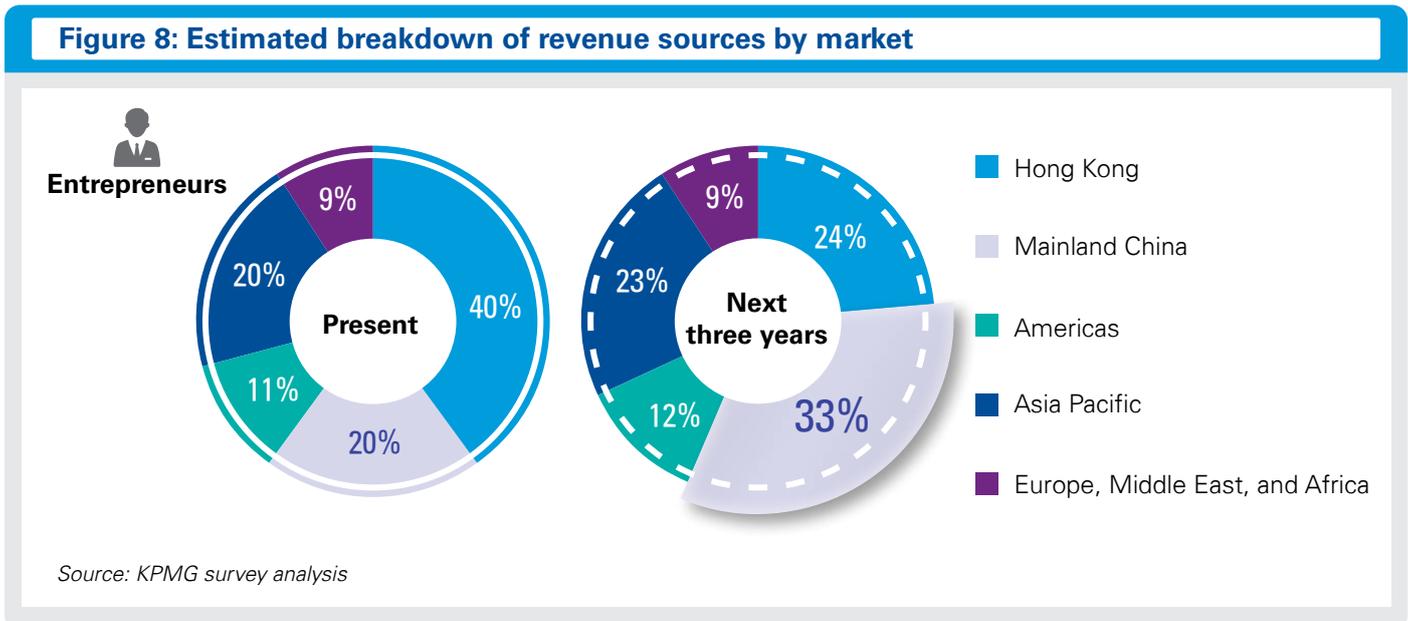
Meanwhile, 16 percent of entrepreneurs polled expect annual sales income of at least HKD 10 million in the next three years. When extended to 2025, 71 percent predicted they would reach HKD 10 million or more.

Figure 7: Projected annual sales income (HKD)



Source: KPMG survey analysis

Entrepreneurs are also showing greater ambition in terms of expanding revenues outside of Hong Kong. While Hong Kong currently accounts for 40 percent of start-ups’ revenues, this figure is predicted to fall to 24 percent in the next three years. Within the same period, entrepreneurs expect their revenue from mainland China to increase to 33 percent of the total, up from 20 percent now. Entrepreneurs are also widening their focus on the Asia Pacific region as a whole, with revenue from the region expected to grow from 20 to 23 percent in three years’ time (see Figure 8).



Due to the small size of the Hong Kong market, developing a regional mindset is necessary if companies want to scale up, says Bonnie Cheung, Venture Partner at 500 Startups, an early stage venture fund and seed accelerator.

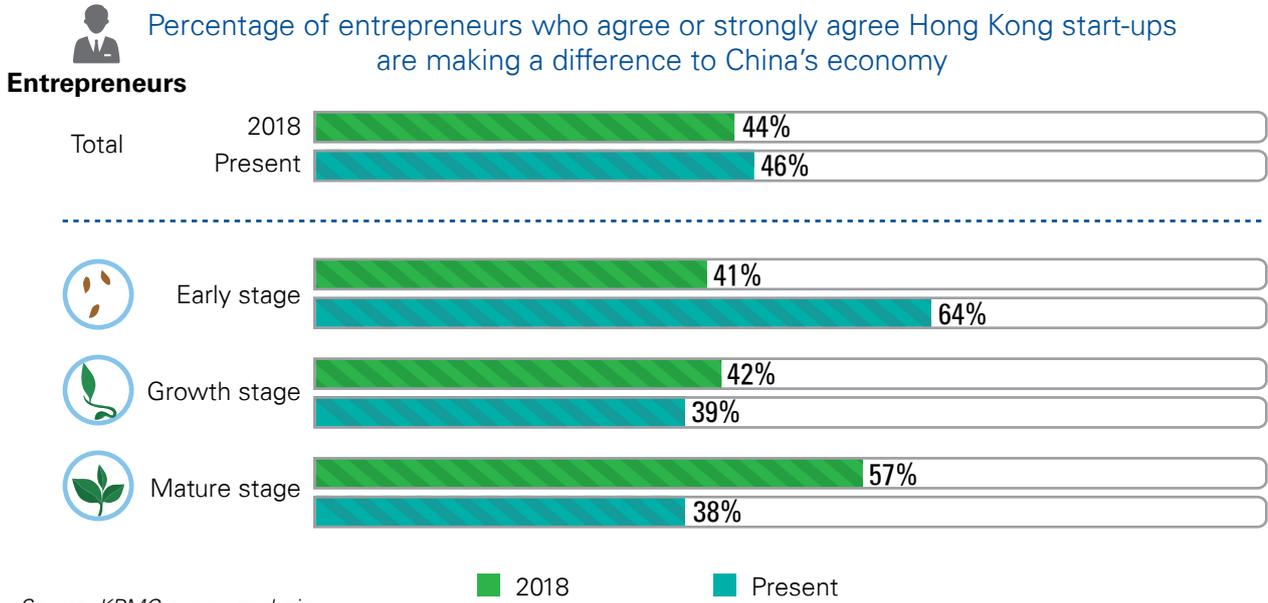
“Hong Kong is small and start-ups must think regionally in order to grow. For regional strategies, Hong Kong start-ups should leverage the city’s advantages in fintech and retail tech,” Cheung says.

Entrepreneurs from early stage ventures are more confident that Hong Kong start-ups can make a difference in China

Not only are entrepreneurs expecting to increase the percentage of revenues they generate from mainland China, they are also increasingly confident that Hong Kong start-ups can make a difference to China’s economy. Nearly half of entrepreneurs polled (46 percent) believe Hong Kong start-ups are making a difference to China’s economy, up slightly from 44 percent last year (see Figure 9 on next page).

However, entrepreneurs in early stage start-ups are more likely to agree with this statement: 64 percent of them agree, compared with 39 percent in growth stage start-ups and 38 percent in mature stage. Furthermore, the proportion of growth and mature stage entrepreneurs who agree declined from last year.

Figure 9: Making a difference to China's economy



Albert Wong
 CEO, Hong Kong Science and Technology Parks Corporation

Building an entrepreneurial culture takes time, and all aspects of society must participate. Awareness must be built at the grassroots level

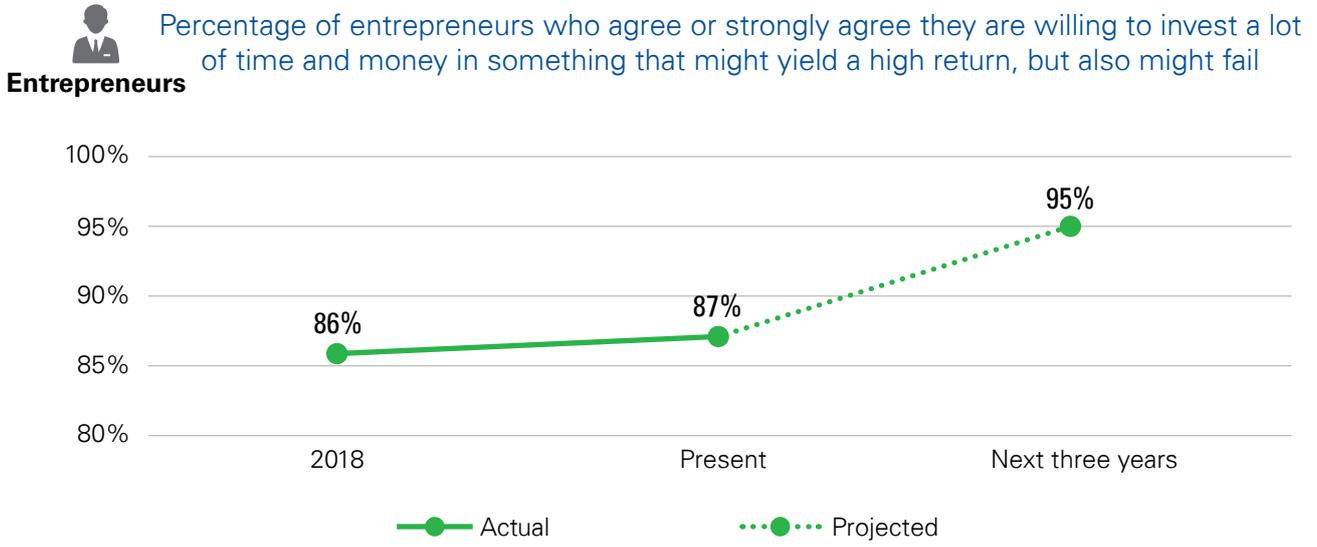


The situation may change going forward as the Greater Bay Area provides new opportunities and capabilities. As Cindy Chow of Alibaba Hong Kong Entrepreneurs Fund explains, incentives offered as part of the Greater Bay Area initiative may help to shift current opinion. "The Greater Bay Area initiative will really help to change entrepreneurs' perspectives and help them tap into the mainland China market," Chow says.

Risk tolerance remains steady among current entrepreneurs but more needs to be done to develop an entrepreneurial mindset among the next generation

Entrepreneurs' level of risk tolerance held steady year-on-year, with 87 percent of those polled agreeing they are willing to invest a lot of time and money in something that might yield a high return but might also fail, compared with 86 percent last year. An even larger proportion, 95 percent, predict they will feel this way over the next three years (See Figure 10).

Figure 10: Risk tolerance



Source: KPMG survey analysis



Bonnie Cheung
Venture Partner,
500 Startups

The acceptance of failure needs to be stronger in Hong Kong. Being an entrepreneur is also about failing, and it is necessary to reward the risk taken

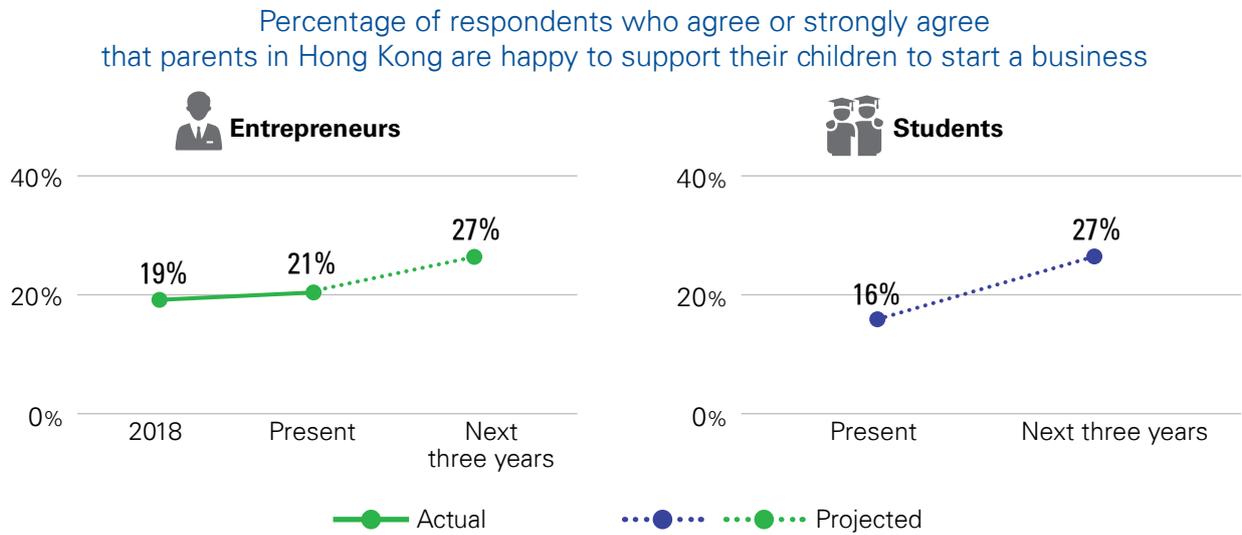


In contrast, students reported a lower level of risk tolerance, with 57 percent of those polled willing to invest time and money in something that might fail. This finding suggests more needs to be done to help young people develop an entrepreneurial mindset.

More support from family and friends needed to encourage people to become entrepreneurs

The survey findings reflect that more support from family and friends will be a critical part of encouraging people to become entrepreneurs. Only 21 percent of entrepreneurs and 16 percent of students surveyed agree that parents in Hong Kong are happy to encourage their children to start a company. Support from parents is expected to rise only slightly going forward (see Figure 11 on next page).

Figure 11: Support from parents to start a business



Source: KPMG survey analysis



Professor Wei Shyy
President,
The Hong Kong
University
of Science and
Technology

A key barrier is the mindset of local Hong Kong students who, for historical and cultural reasons, tend to seek family endorsement that they perform well and are engaged in areas deemed appropriate for their future professional development. Local students need to be better supported to develop self-confidence beyond academic grades



There are also mixed opinions among those surveyed as to whether entrepreneurship is a well-respected career path in Hong Kong. 46 percent of entrepreneurs polled agree with this statement, although 61 percent agree entrepreneurship is a feasible and sustainable career path. In contrast, 53 percent of students surveyed agree that entrepreneurship is a well-respected career path, but only 44 percent think running their own business would be feasible and sustainable.

Cindy Chow, executive director of Alibaba Hong Kong Entrepreneurs Fund, offers a potential explanation for this trend: “Sometimes students or their parents just focus on them taking up traditional career paths, like being an accountant, lawyer or doctor,” she says.

To further promote interest in entrepreneurship, Chow says Hong Kong’s education system should be updated: “If we really want to influence the younger generation to be more innovative and creative, we have to do that in our primary and secondary education system – so students can build up not only the technical skills but also a more creative and entrepreneurial mindset.”

One of the biggest challenges for Hong Kong’s entrepreneurial scene is cultural change, Bonnie Cheung of 500 Startups observes, although she notes that attitudes have been shifting. “Things have been very encouraging in the past five years, as there have been more and more graduates who are willing to take a chance, rather than going directly to corporate careers,” she says.

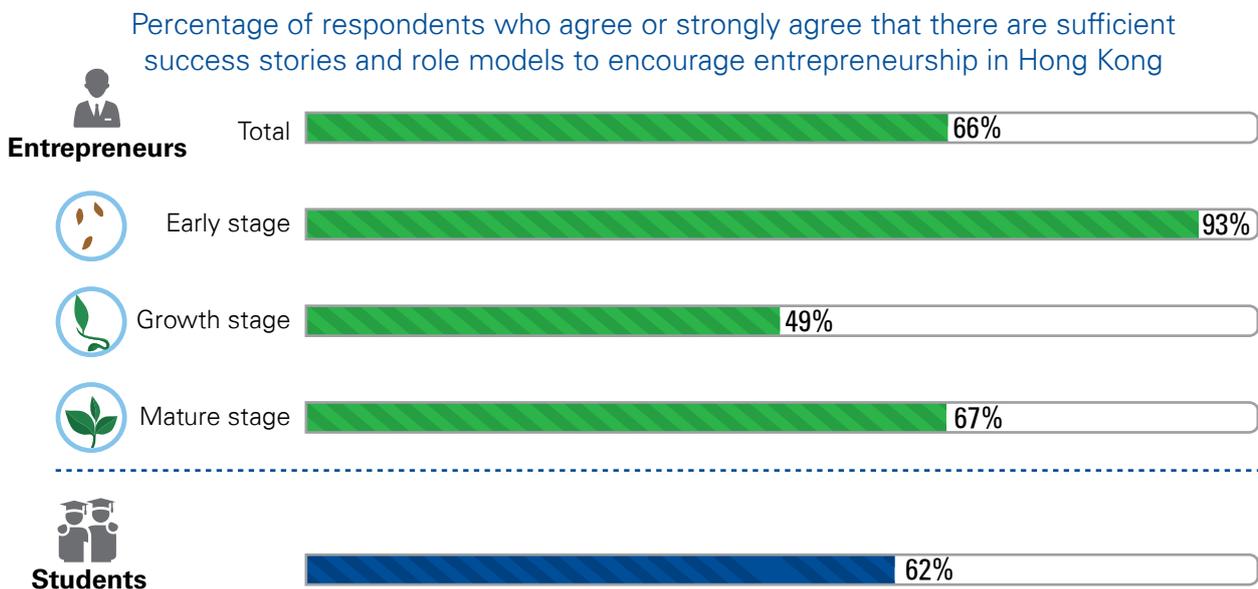
Most Hong Kong entrepreneurs agree the city has sufficient role models and success stories to encourage entrepreneurship, but fewer in growth stage start-ups agree

Role models and success stories play an important role in generating interest in start-ups and inspiring people to become entrepreneurs. They also show that such ventures can be successful.

Professor Wei Shyy, President of The Hong Kong University of Science and Technology, notes that role models are particularly important for students. “In the present era, with fast advancement on multiple fronts, the young generation is heavily influenced by trends, and role models will help them further develop interest in and learn the substance of entrepreneurship,” he says.

The survey shows that two-thirds of entrepreneurs (66 percent) believe there are now sufficient role models and success stories to encourage people to start a business in Hong Kong (see Figure 12). 62 percent of students surveyed also agree on this point.

Figure 12: Presence of success stories and role models to encourage entrepreneurship



Source: KPMG survey analysis

However, entrepreneurs showed diverging opinions on this topic according to venture stage. While 93 percent of entrepreneurs at early stage start-ups and 67 percent of entrepreneurs at mature stage start-ups agree there are sufficient role models and success stories in Hong Kong, only 49 percent of entrepreneurs in growth stage companies feel the same way.

Irene Chu of KPMG China says the findings are somewhat encouraging for early stage start-ups but highlight gaps for start-ups in the growth stage.

“Whether they ultimately succeed or fail, the presence of role models and examples for start-ups in all stages of development are essential to the development of the Hong Kong start-up ecosystem,” Chu says. “What we are hearing on the ground is that more role models are still needed to inspire potential entrepreneurs to pursue their business ideas.”



Patrick Kirby
Director, Technology,
Media,
Telecommunications
& Innovation, Hong Kong,
KPMG China

As the Hong Kong ecosystem expands and matures, it must continue to develop new capabilities to remain vibrant



Capabilities

Effective, relevant and enabling support structures can empower entrepreneurs to realise their vision. Capabilities required to support a vibrant entrepreneurial ecosystem include regulation, capital, technology, support services, and human capital.

The study suggests that the support services infrastructure for start-ups in Hong Kong has improved during the past 12 months, with entrepreneurs polled more likely to use such services than they were last year.

Last year's report highlighted a gap in mentoring support for start-ups. This year's study shows that entrepreneurs' use of mentors for a variety of purposes has increased overall, but the results still point to gaps in suitable mentors to help growth stage start-ups address the problems they are facing.

There is also a need to further develop human capital capabilities, particularly to support growth stage and mature start-ups. The survey finds that while entrepreneurs at all venture stages are finding it easier to recruit staff than they were last year, it is still not easy for start-ups to find employees with an entrepreneurial mindset.

In addition, the findings suggest that Hong Kong entrepreneurs are looking to become less reliant on informal sources of funding – including their own savings or money from family and friends – for their ventures. However, more needs to be done to help them pursue and gain access to more formal funding sources – such as crowd funding, venture capital, bank loans and angel investors.

Entrepreneurs expect to capitalise on Hong Kong's position in Asia but must adapt to the high cost of doing business in the city

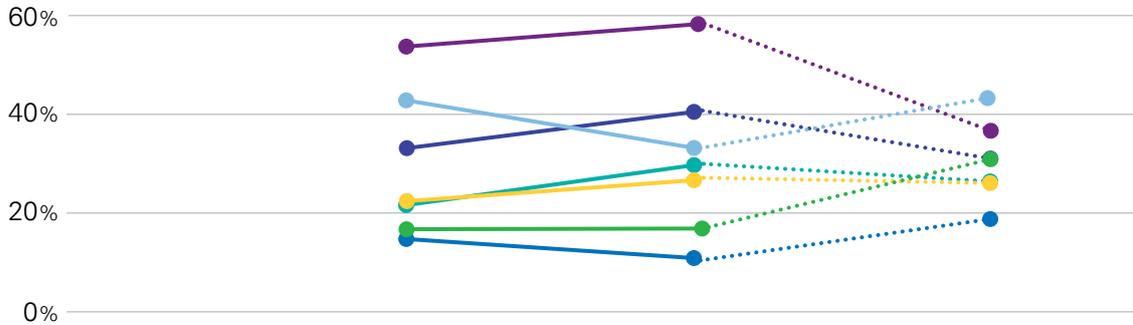
Ease of doing business is still seen as Hong Kong's top advantage for start-ups, cited by 58 percent of those surveyed, followed by tax or other government incentives at 41 percent (see Figure 13). 5 percent more entrepreneurs see ease of doing business as a top advantage compared with last year (53 percent); and government incentives also rose 9 percentage points to 41 percent, to claim the number-two spot.

However, entrepreneurs anticipate a shift in what will be the city's key competitive advantages going forward. As start-ups look to expand into markets beyond Hong Kong, the city's position in Asia is expected to be its key advantage in three years' time, cited by 42 percent of entrepreneurs, with access to funding also rising in importance, cited by 31 percent.

Figure 13: Key advantages of doing business in Hong Kong

 **Entrepreneurs**

Percentage of entrepreneurs who selected each of the below responses as one of the top three advantages

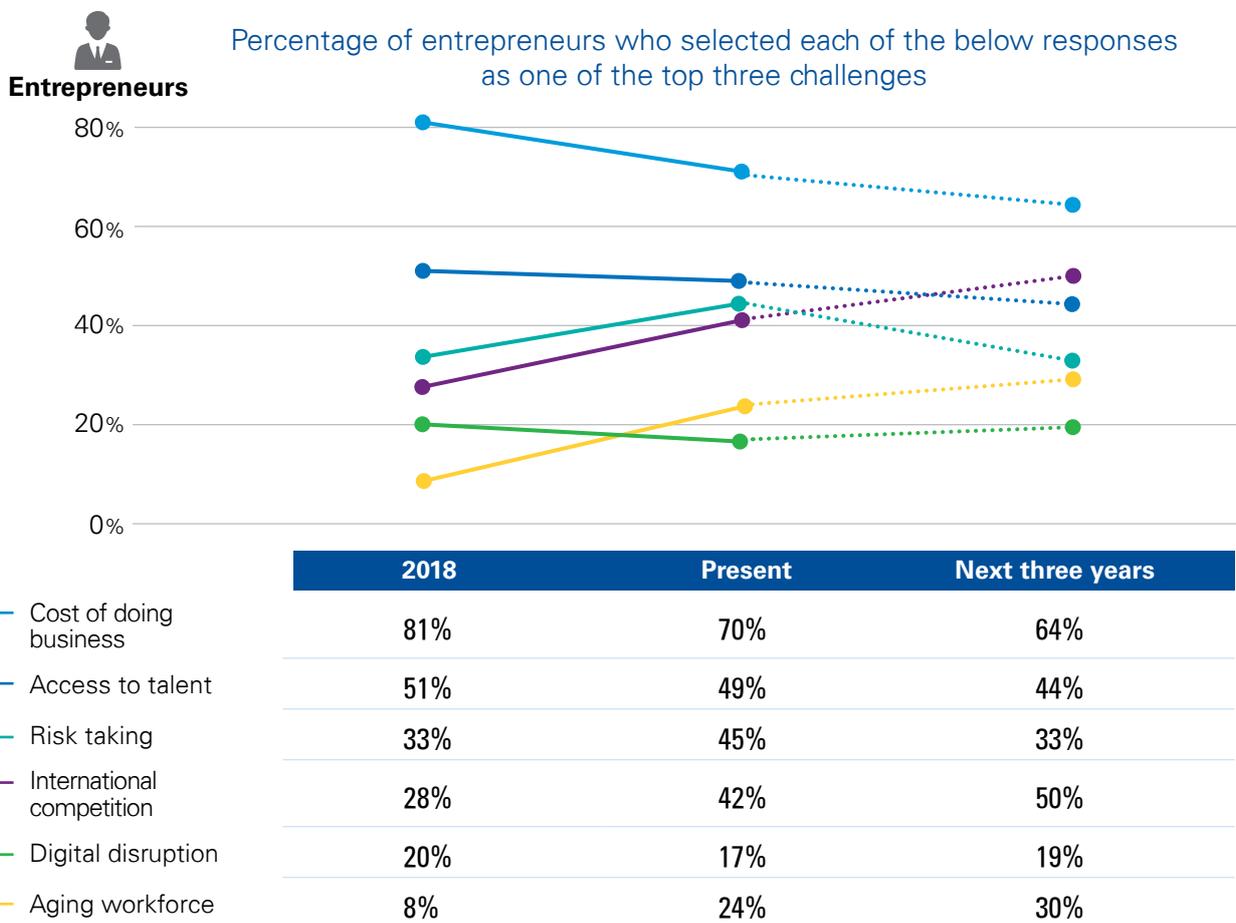


	2018	Present	Next three years
● Ease of doing Business	53%	58%	36%
● Position in Asia	43%	33%	42%
● Tax or other government incentives	32%	41%	31%
● Established start-up network/ecosystem	22%	27%	26%
● Legal framework	21%	30%	26%
● Access to Funding	16%	16%	31%
● Entrepreneurial mindset of Hong Kong	15%	10%	19%

Source: KPMG survey analysis
 Note: partial list of responses shown



Figure 14: Key challenges of doing business in Hong Kong



Source: KPMG survey analysis
 Note: partial list of responses shown



Theodore Ma
 Co-founder, CoCoon

Hong Kong’s processes are clear, clean, efficient and straight-forward and help ensure that business owners will not run into any surprises



Meanwhile, the cost of doing business in Hong Kong is seen as the top challenge, cited by 70 percent of entrepreneurs. It is expected to remain the biggest challenge in three years’ time. As a top of mind issue, however, cost will decline in relative importance as access to talent, international competition and an ageing workforce rise as key challenges in the next three years, the study suggests (see Figure 14).

One entrepreneur respondent to the survey elaborated on why cost is still considered a key challenge: “The cost of business is too high and requires higher than average returns to justify the investment - both of which increase the risk of failure for setting up a new venture in Hong Kong.”

Despite this, Hong Kong’s well-regulated and reliable business environment provides relative certainty to business owners and founders, notes Theodore Ma, Co-founder of Hong Kong-based start-up incubator and technology investment fund CoCoon.

“Hong Kong’s processes are clear, clean, efficient and straight-forward and help ensure that business owners will not run into any surprises, such as additional layers of approvals, hidden costs, or contradicting rules. Such obstacles are often found in less-developed cities,” Ma says.

Entrepreneurs are increasingly embracing formal sources of funding including venture capital and private equity

With regards to access to capital, the findings indicate that Hong Kong entrepreneurs still heavily rely on informal sources of funding, although there are signs they are shifting towards more formal funding sources.

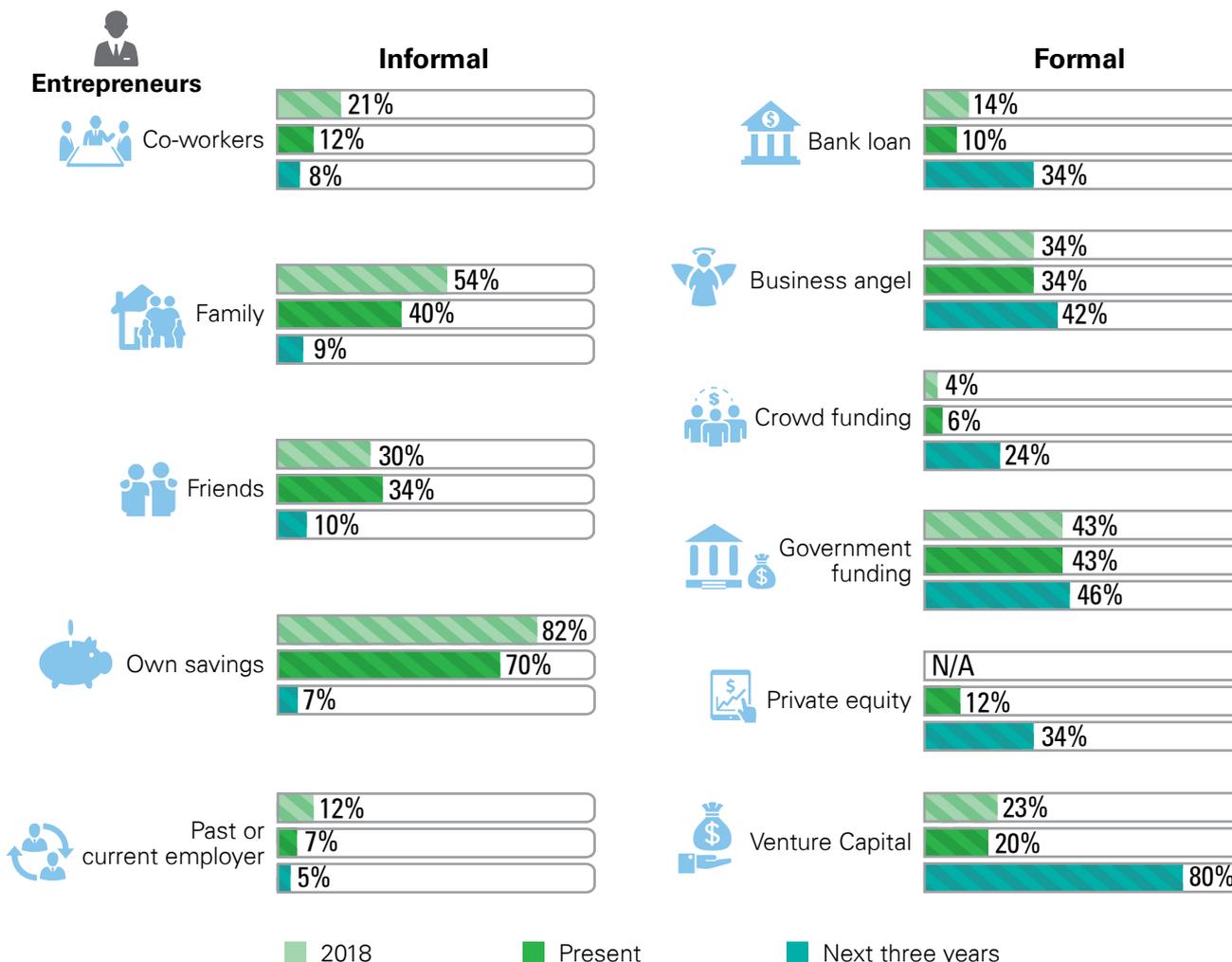
At present, entrepreneurs' main sources of funding continue to be their own savings and other sources such as family, friends and co-workers, although fewer respondents report that they are using informal sources compared to last year's survey.

70 percent of entrepreneurs surveyed say they use their own savings to fund their businesses, down from 82 percent in 2018. 40 percent are using money from family, compared with 54 percent last year (see Figure 15 on the next page).

Entrepreneurs expect the trend towards formal sources of funding to accelerate going forward. 80 percent of entrepreneurs polled say they will be using venture capital within three years, up from 20 percent now. 34 percent predict they would be using private equity funding in three years, compared with 12 percent now, while 42 percent expect to get money from business angels, compared to 34 percent at present. Only 9 and 10 percent respectively of entrepreneurs think they will be using money from family or friends in three years' time, while just 7 percent expect to be using their own savings.



Figure 15: Use of funding sources



Source: KPMG survey analysis

Note: respondents could choose all categories that apply. Data shows the percentage of respondents who use each funding source, not the value of funding. Private equity was not measured in the 2018 study.

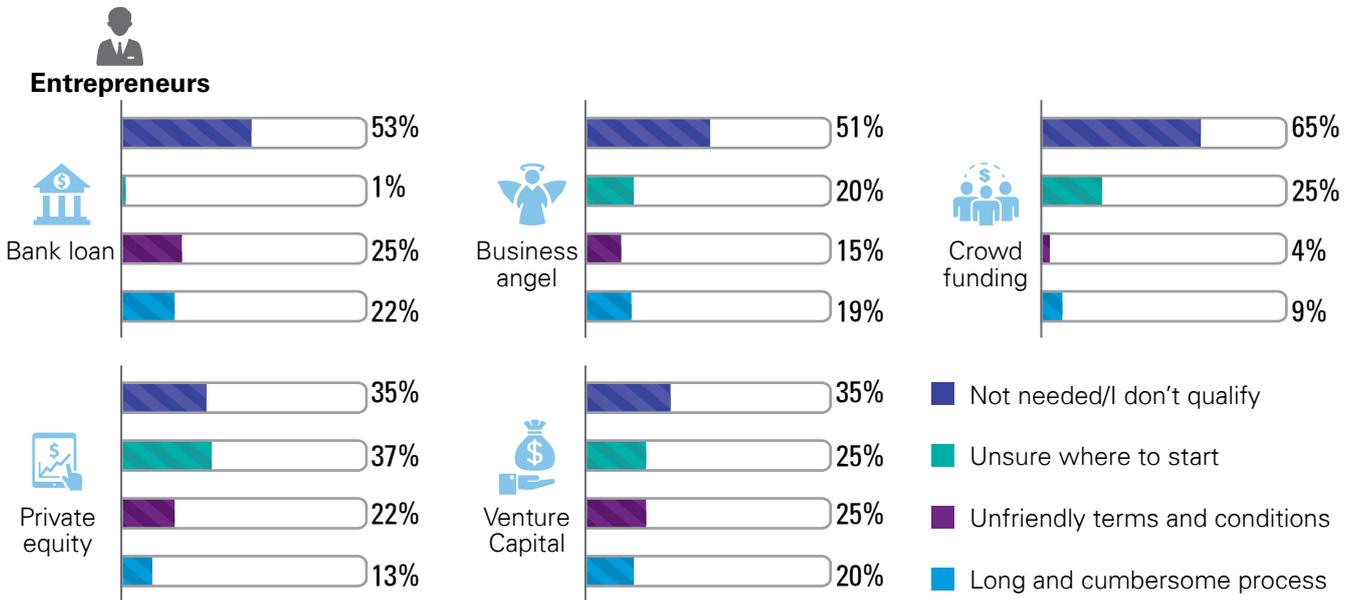
As entrepreneurs increasingly seek formal sources of funding, the study also points to gaps in their awareness of how to access funds.

More than half of entrepreneurs polled say they did not use business angels, bank loans and crowd funding because they are not needed or they did not qualify (see Figure 16). At the same time, 37 percent of entrepreneurs say they are unsure where to start to secure private equity funding and 25 percent say the same about venture capital.

A partial explanation of this trend could be a lack of access to formal sources of funding in Hong Kong, particularly for growth stage companies, explains Bonnie Cheung of 500 Startups.

“Funding for growth stage companies is difficult. There aren’t many venture capital funds capable of leading rounds, Cheung says. “Additionally, a lot of venture capital funds in Hong Kong invest abroad as opposed to locally.”

Figure 16: Reasons for not using specific funding sources



Source: KPMG survey analysis
 Note: only entrepreneurs who said they do not use specific funding sources could respond.

Meanwhile, 25 percent of entrepreneurs also said they did not use venture capital and bank loans because of unfriendly terms and conditions, with 22 percent feeling the same way about private equity.

This finding suggests more education is needed to help entrepreneurs better understand formal funding channels and how to access them.

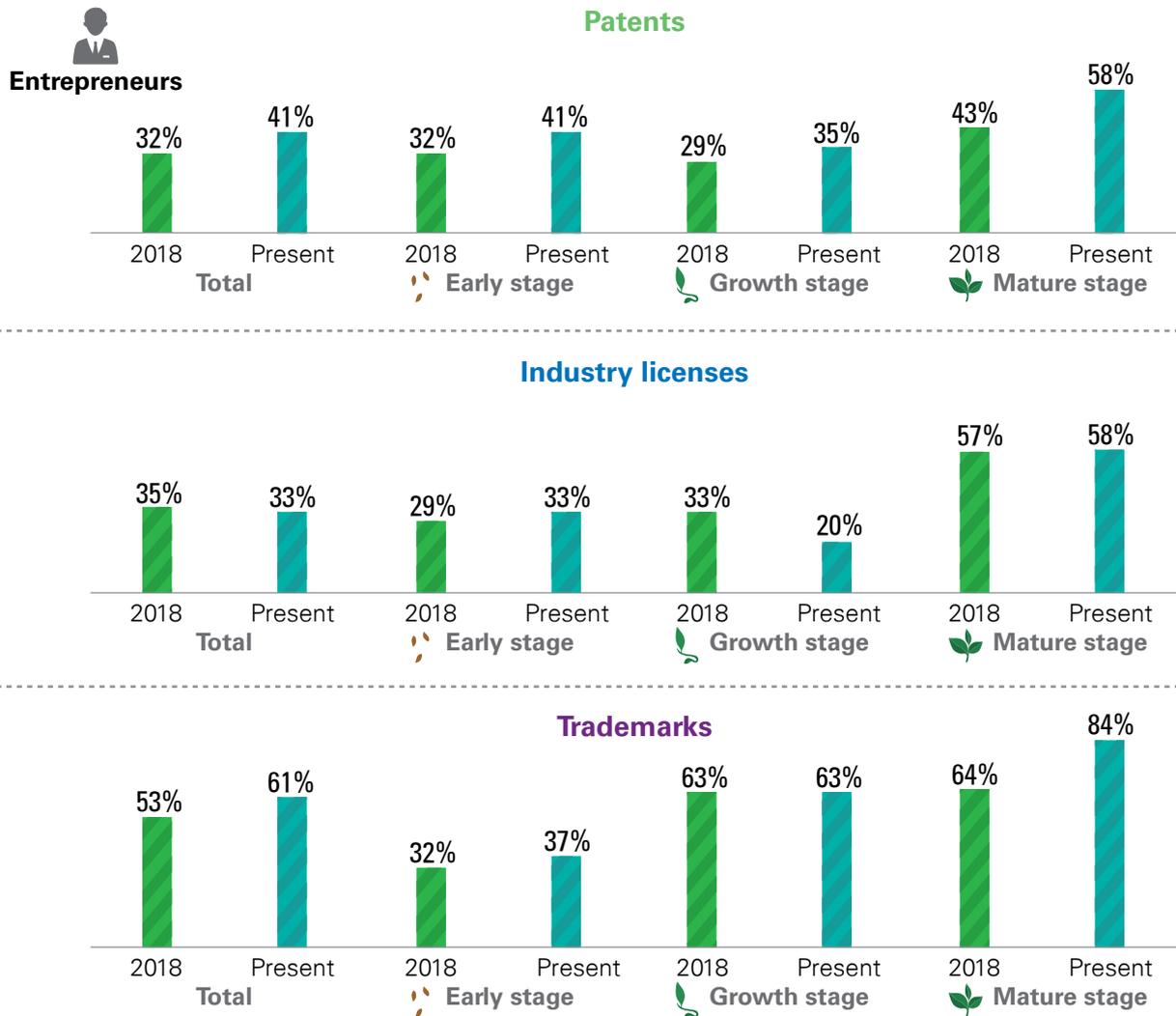
Cindy Chow of Alibaba Hong Kong Entrepreneurs Fund explains: “Investors are not philanthropists – they expect a return on investment,” she says. “Some of the terms may not be friendly, but if you want to be in the game, sometimes you have to bite the bullet.”

Protection of intellectual assets is increasing among mature start-ups but more needs to be done to promote intellectual property ownership

Intellectual property ownership is important for start-ups to retain a sustainable competitive advantage in the market. The survey findings suggest that start-up ownership of intellectual property protections including patents, industry licenses and trademarks is increasing year-on-year according to entrepreneurs polled (see Figure 17 on next page) but there is still further room for development.

Among mature stage start-ups, 58 percent of entrepreneurs at these companies say they own patents or industry licences, while 84 percent said they own trademarks. Compared with last year’s survey, 15 percent more entrepreneurs at mature stage start-ups say they own patents, while 20 percent more said they owned trademarks.

Figure 17: Intellectual property ownership by venture stage



Source: KPMG survey analysis



Professor Dennis Lo

Director, Li Ka Shing Institute of Health Sciences, The Chinese University of Hong Kong

If Hong Kong has aspirations to become a technological hub, weaknesses in local experience when it comes to intellectual property legal support should be promptly addressed



The findings suggest that a lack of knowledge about intellectual property protections may explain current gaps in ownership, and that more needs to be done to assess what intellectual assets need to be protected at early stage and growth stage. To address this, more education and training should be provided on intellectual property and the filing of patents.

Professor Dennis Lo, Director of the Li Ka Shing Institute of Health Sciences, The Chinese University of Hong Kong, observes that there is limited know-how in Hong Kong when it comes to the matter of intellectual property and patent filing.

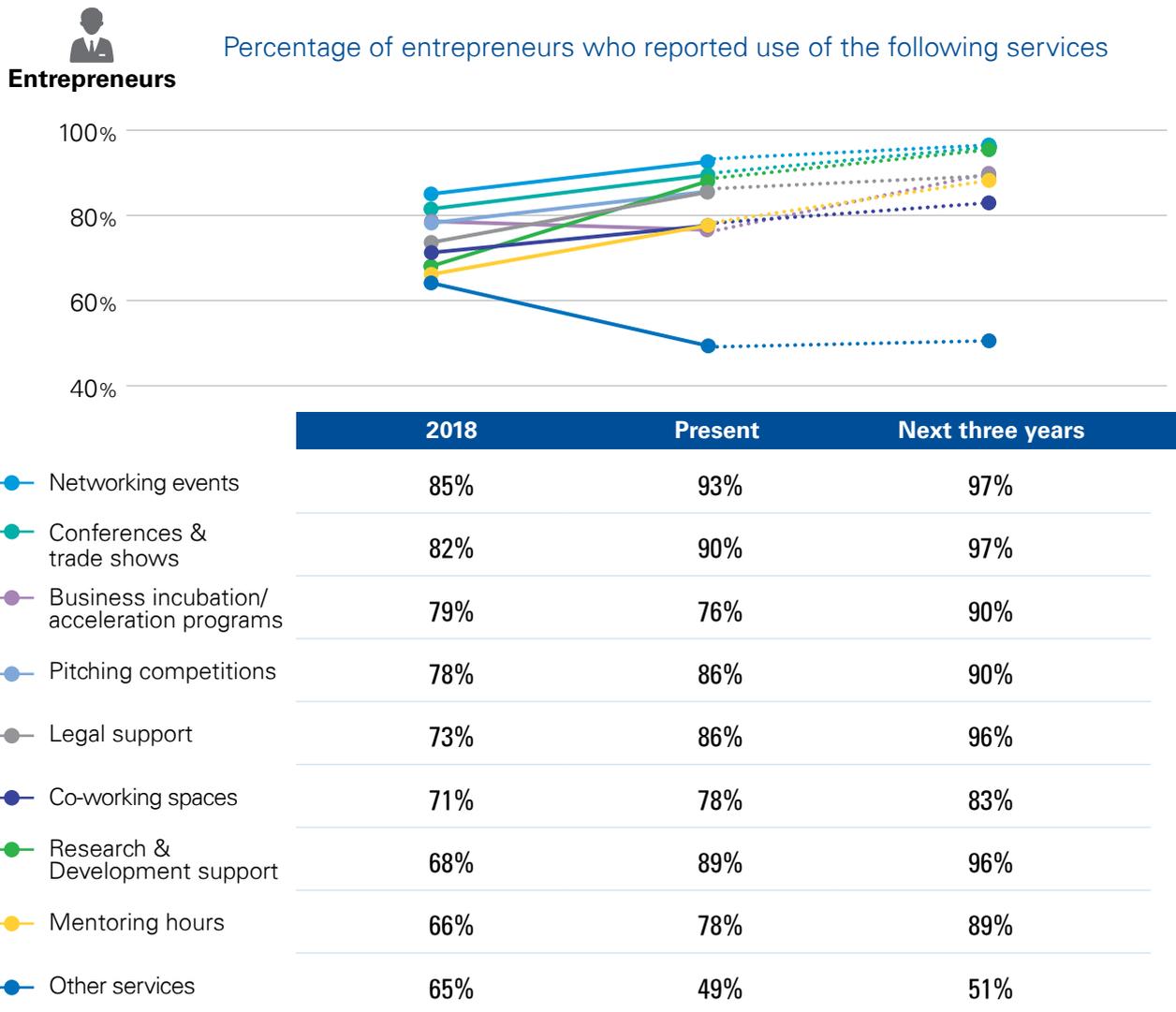
“Filing a patent correctly is an art, and getting it wrong can substantially reduce the value of an invention. There is a paucity of local law firms with a full spectrum of expertise in intellectual property and lawyers who have scientific training. Due to the small number of patent litigations in Hong Kong courts, there is also a relative lack of local experience in this area. If Hong Kong has aspirations to become a technological hub, such relative weaknesses should be promptly addressed,” Lo says.

Use of support services is rising, but services need to be more targeted to help growth stage and mature start-ups

The study reflects that entrepreneurs are increasing their overall use of support services for start-ups – a trend which is expected to continue in the next three years.

More entrepreneurs say they are using a range of services, including pitching competitions, co-working spaces, mentoring, research and development (R&D) and legal support compared with last year’s survey (see Figure 18).

Figure 18: Use of support services

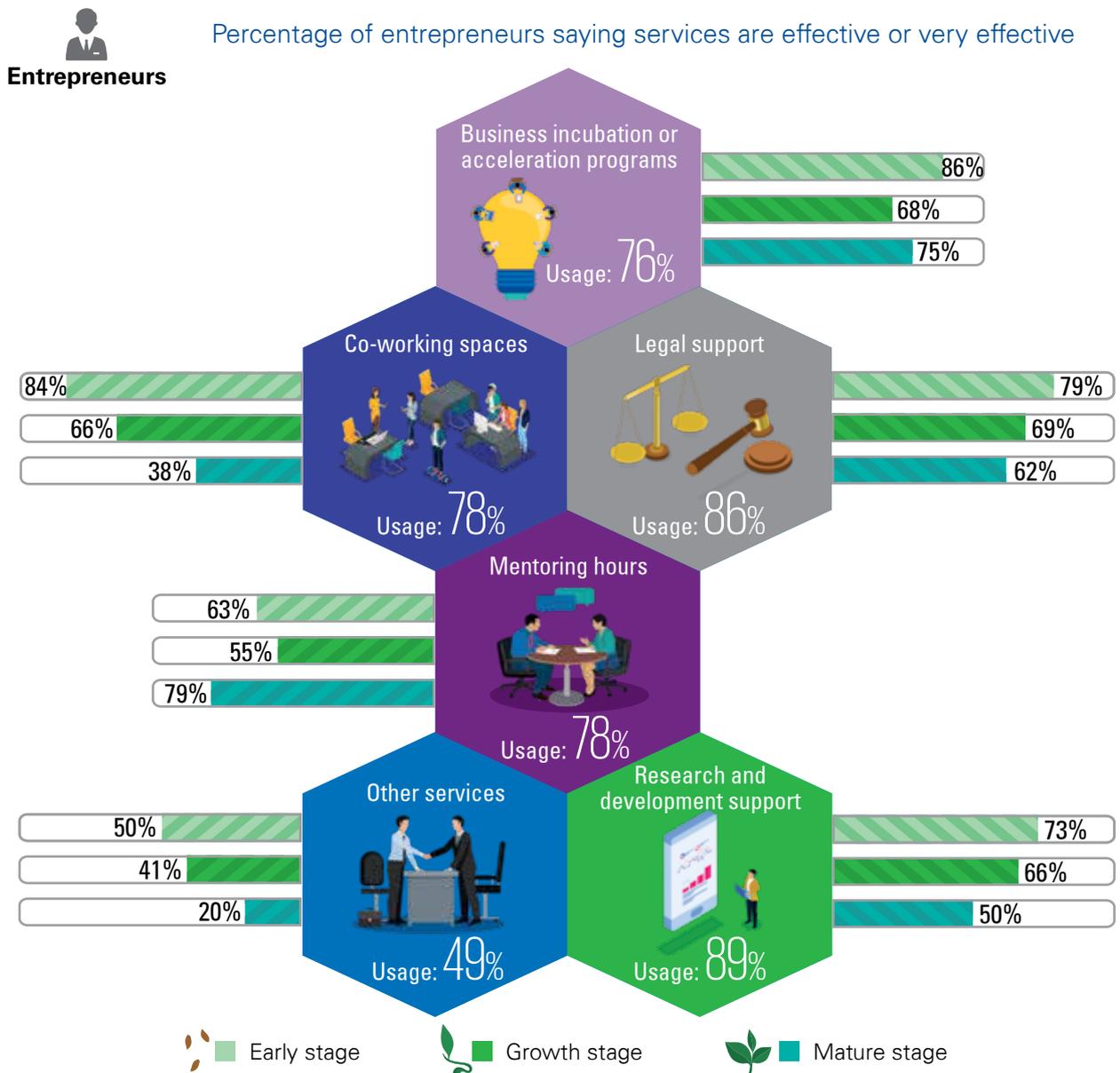


Source: KPMG survey analysis

Opinions on how effective these support services are, however, tended to vary by venture stage – with entrepreneurs in early stage companies more likely to agree that services are effective compared to later stage (see Figure 19). Specifically, for co-working spaces, incubation and acceleration programs, legal support, and research and development support, these services are less effective for growth and mature stage start-ups compared to early stage.

For example, 86 percent of entrepreneurs in early stage start-ups agree that business incubation and acceleration programmes are effective, compared to 68 percent of those at growth stage start-ups.

Fig. 19: Effectiveness of support services



Source: KPMG survey analysis

Note: "Usage" = percentage of respondents who say they use these services. See Figure 18 for more information.



Ricky Yin-To Chiu
CEO, Phase Scientific
International

Mentoring is not just required for founders. As start-ups grow out their leadership roles, including COO, CFO and others, they need to be able to access and gain guidance from experienced mentors



Similarly, 79 percent of respondents at early stage start-ups rate legal support services as being effective, compared with 62 percent of mature stage companies. Furthermore, 73 percent of entrepreneurs at early stage start-ups agree R&D support services were effective, while only 50 percent of those at mature stage start-ups agree.

The findings also show a similar trend between the use and effectiveness of mentors. Overall 78 percent of entrepreneurs surveyed say they use mentors, a 12 percent rise from last year. However, while 63 percent of entrepreneurs at early stage start-ups agree mentoring is effective, the figure falls to 55 percent among those in growth stage ventures.

This reflects a gap in the number of qualified mentors currently based in Hong Kong as well as a greater need for broader, in-depth mentoring that extends throughout the life of a start-up. To help address this, Bonnie Cheung of 500 Startups suggests that mentors could be sourced from overseas to assist Hong Kong start-ups.

“Entrepreneurs usually take a break after selling their company, and I think more of them could be brought to Hong Kong during this time to join a local accelerator and share their experiences,” Cheung explains.

Sourcing qualified talent is becoming easier, but entrepreneurial mindset is a key challenge

Compared with last year, entrepreneurs are finding it easier to staff their ventures. 51 percent of entrepreneurs polled say they can attract the right talent to start a business, with that figure rising to 67 percent among those in mature stage start-ups. This compares with 29 percent of entrepreneurs polled and 36 percent of those in mature stage who agreed on this point last year (see Figure 20 on next page).

49 percent of entrepreneurs across all venture stages say it is easy to attract and recruit staff with the required skills and experience, 11 percentage points more compared to last year’s survey. This trend was particularly noticeable among entrepreneurs from mature stage start-ups, with 67 percent agreeing they can attract talent with the right skills and experience, up from 14 percent last year.

Fig. 20: Attracting, motivating, engaging and retaining quality talent

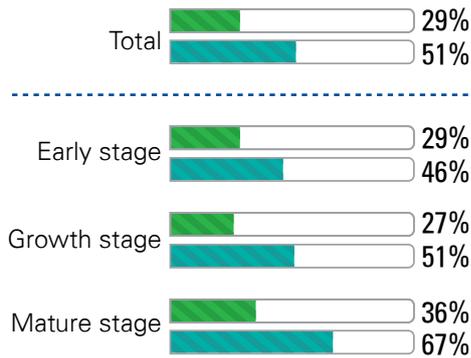


Percentage of entrepreneurs who agree or strongly agree with the following statements

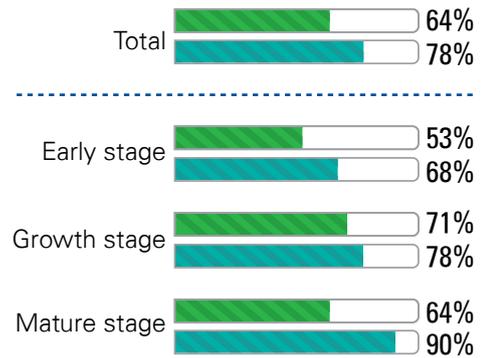
Entrepreneurs



Hong Kong start-ups can attract the right talent to start a business



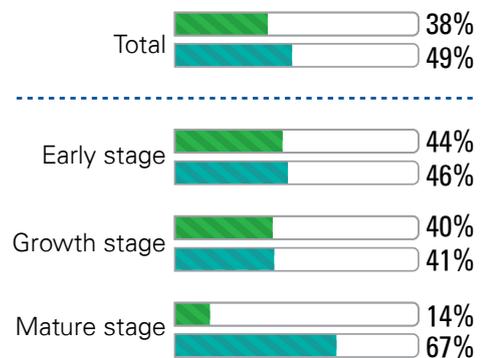
Staff are proud to work for a start-up



I find it easy to recruit and retain staff who have an entrepreneurial mindset



I find it easy to attract and recruit staff who have the experience and skills required



■ 2018

■ Present

Source: KPMG survey analysis



Professor Zhang Lei
 Chair Professor of Computer Vision and Image Analysis, The Hong Kong Polytechnic University

Most PhD students in high-demand fields in Hong Kong are from mainland China, while local students studying in this area tend to seek employment opportunities in the mainland. There is a need to develop more local talent and keep local talent in Hong Kong



78 percent of entrepreneurs polled say their staff are proud to work for a start-up, a 14 percent increase since last year. This figure rises to 90 percent among mature start-ups compared with 64 percent last year.

In contrast, 44 percent of entrepreneurs agreed it was easy to recruit and retain staff who had an entrepreneurial mindset, a figure which remains broadly unchanged from last year.

Professor Zhang Lei, chair professor of computer vision and image analysis at The Hong Kong Polytechnic University, notes that talent cultivation and retention remains a key development area for Hong Kong. Addressing deficiencies in this area should start within the city’s education system, he says.

“Most PhD students in high-demand fields in Hong Kong are from mainland China, while local students studying in this area tend to seek employment opportunities in the mainland,” Zhang says. “There is a need to develop more local talent and keep local talent in Hong Kong.”

More should be done to promote interest in STEAM

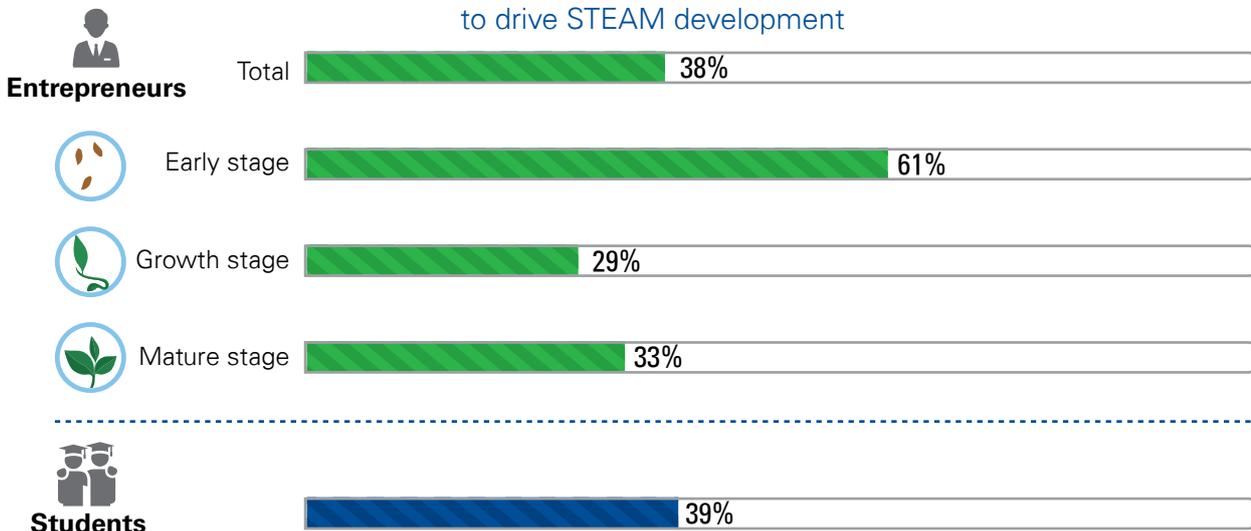
Science, Technology, Engineering, Art and Applied Mathematics (STEAM) plays an important role in Hong Kong’s start-up landscape, as having students with an interest and experience in this area helps to create a pipeline of future entrepreneurs and start-up employees with the complementary capabilities that are needed to help businesses grow.

The survey findings suggest more still needs to be done to promote the development of STEAM in Hong Kong. Only 38 percent of entrepreneurs agree there is sufficient support in this area, falling to just 29 percent of those at growth stage companies. Entrepreneurs at early stage start-ups are more positive, with 61 percent agreeing with the statement (see Figure 21).

Students took a broadly similar view, with 39 percent of those questioned agreeing there was sufficient support to drive STEAM development.

Figure 21: Support to drive STEAM development in Hong Kong

Percentage of respondents who agree or strongly agree there is sufficient support to drive STEAM development



Source: KPMG survey analysis
 STEAM = Science, Technology, Engineering, Art and Applied Mathematics



Professor Dennis Lo

Director, Li Ka Shing
Institute of Health
Sciences,
The Chinese University
of Hong Kong

Hong Kong is potentially losing students who are genuinely interested in pursuing a STEAM career due to the cost of living, which would tend to drive students towards professions with a perceived security in income, rather than innovation-based career where breakthroughs are not guaranteed



Professor Dennis Lo, Director of the Li Ka Shing Institute of Health Sciences, The Chinese University of Hong Kong, observes: “Hong Kong is potentially losing students who are genuinely interested in pursuing a STEAM career due to the cost of living, which would tend to drive students towards professions with a perceived security in income, rather than innovation-based career where breakthroughs are not guaranteed.” He suggests more needs to be done to convey the rewards of a career in STEAM.

Lo also points out that Hong Kong’s current assessment system may also be potentially limiting student interest in STEAM. “The current assessment system measures recall of existing knowledge, not the ability to generate new knowledge,” he says. “This could potentially be hindering students who might be good at invention but who might find conventional rote-learning too uninspiring.”

Cindy Chow of Alibaba Hong Kong Entrepreneurs Fund notes that a more holistic approach to STEAM education is needed in order to improve the ecosystem.

“There should be more emphasis to include a more balanced array of technology education into school curriculums, as opposed to focusing mainly on coding,” Chow says. “It’s equally very important that we help teachers get updated on the latest technologies.”

She adds: “We do see a lot of trade associations and corporations that are willing to support various STEAM initiatives in schools with students of all ages, and we hope to see this continue.”



Recent progress in Hong Kong's entrepreneurial landscape

The first edition of the *Transforming Hong Kong Through Entrepreneurship* report published in July 2018 identified seven areas where action was required to help support entrepreneurship, many of which have since been addressed.

A key recommendation was to promote greater collaboration between Hong Kong and the Greater Bay Area (GBA) to facilitate the free flow of academics and business knowledge and the sharing of facilities.

The GBA aims to promote in-depth cooperation among nine cities in Guangdong Province and the Special Administrative Regions of Hong Kong and Macau, with the aim to develop a world-class city cluster by way of reforms, innovation and opening-up.

The Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area (GBA Outline Development Plan), published by China's State Council in February 2019, includes several measures intended to benefit Hong Kong start-ups.

One provision will enable Hong Kong-based tech companies to access R&D facilities in Guangdong. Higher education and R&D institutes in Hong Kong will also be eligible to apply for mainland China government grants. The GBA Outline Development Plan also aims to increase the flow of technology specialists and academics between Hong Kong and the mainland and vice versa.¹





Irene Chu

Partner, Head of
New Economy and
Life Sciences,
Hong Kong,
KPMG China

In order for Hong Kong to become a successful innovation hub, there needs to be more of a focus on attracting and retaining talent. There is huge potential for Hong Kong to leverage its connection to the Greater Bay Area to complement the local talent pool



In addition, the Hong Kong SAR government launched the three-year Technology Talent Admission Scheme pilot in June 2018, enabling firms at Science Park and Cyberport to apply for fast-track visas or entry permits for talents working in certain sectors, including AI, biotechnology, and fintech.² The mainland China government has also made it easier for professionals in Hong Kong to spend time in the mainland without being liable for taxes there, clarifying that a visit of less than 24 hours does not qualify as a full day under the current 183-day limit that people can spend there without being classed as tax resident.³

The GBA initiative aims to create a global I&T hub in the region, with Hong Kong as a leading R&D centre and industrial development platform that can provide support for the Belt and Road Initiative.⁴

Professor Wei Shyy, President of The Hong Kong University of Science and Technology, points out that Hong Kong is uniquely positioned to benefit from and contribute to the GBA as a result of its legacy advantage as a free market with a transparent legal framework. This legal system has enabled Hong Kong to develop into a leading intellectual property trading hub, he says.

Another development area identified in last year's study was improving the access entrepreneurs have to capital. Hong Kong's new listing regime for companies in emerging and innovative sectors, which was launched in April 2018, has also helped new economy companies raise funds, with more than 25 percent of IPOs in 2018 done by companies in the sector. Telecom, media and technology companies raised a total of more than HKD 150 billion during the year – a figure that exceeded the sector's combined funds raised for the past 15 years.⁵

The new regime has also led to eight biotechnology companies and two other technology companies with weighted voting rights structures raising funds.⁶ The government is also considering introducing a limited partnership regime and new tax arrangements to attract private equity funds to operate in Hong Kong.⁷

Major funding rounds in the past few months include Klook, which raised USD 425 million led by Softbank Vision Fund in April, Lalamove, which raised USD 300 million led by Hillhouse Capital in February and Airwallex, which completed a USD 100 million round of funding led by DST Global in March.⁸

The study also called for greater access to support services for start-ups and the need to develop an entrepreneurial mind-set in Hong Kong, such as through educational reforms to include entrepreneur-related lessons in the secondary school curriculum, and to create a larger pool of interns with STEAM skills, which smaller firms could tap into. This year's study identifies some improvements to the overall talent picture. Please see page 35 for more details.

Meanwhile, the city's innovation and technology (I&T) ecosystem has continued to develop, backed by strong government support.

In her October 2018 Policy Address, Hong Kong Chief Executive Carrie Lam said the government had made good progress in its goals for I&T, having committed significant resources to its development.⁹

In 2017, the government identified four priority sectors – artificial intelligence (AI), biotechnology, fintech, and smart city – as “areas of strength” upon which it is focusing its resources.¹⁰ These priority sectors are key



Ricky Yin-To Chiu
CEO, Phase
Scientific International

There has been a turning of the tide for entrepreneurship in Hong Kong in the last few years with a ground swell of enthusiasm, focus and government determination



beneficiaries of government investment in the 2019-20 Budget, including HKD 10 billion earmarked to establish two research clusters at Hong Kong Science and Technology Park.¹¹ One of these centres will be used to develop healthcare technologies while another will focus on AI and robotics. These priority sectors are covered in greater detail in the next section of this report (see page 44).

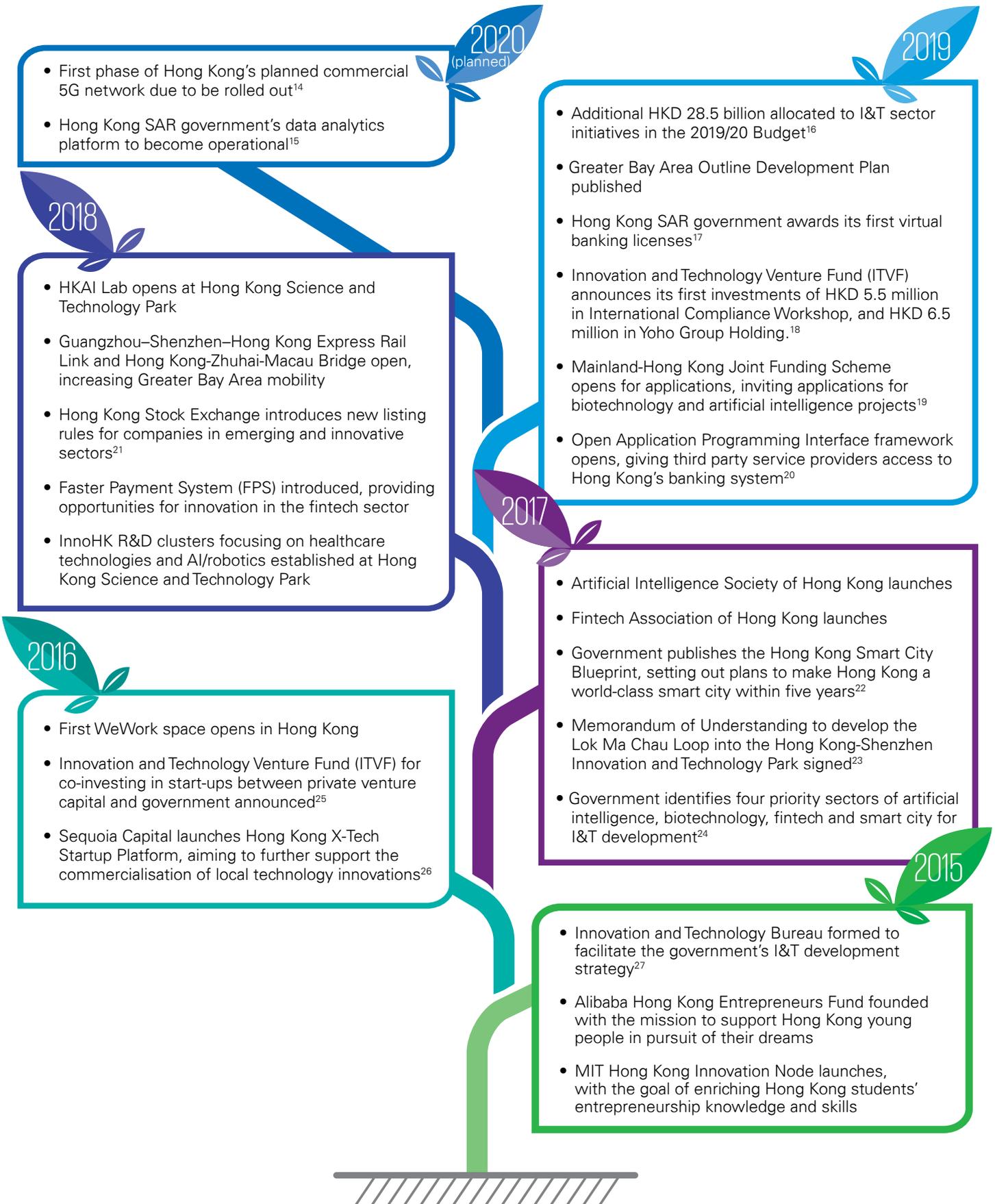
The government is also continuing to invest in start-up infrastructure, with HKD 15.5 billion allocated to develop and upgrade facilities at Cyberport and Hong Kong Science and Technology Park, and HKD 20 billion for the first phase of the Lok Ma Chau Loop Innovation and Technology Park near the Hong Kong-Shenzhen border. An additional HKD 10 billion is being injected into the Innovation and Technology Fund to support research and development (R&D) in Hong Kong. In addition, a new Data Technology Hub and Advanced Manufacturing Centre, both to be located at the Tseung Kwan O Industrial Estate, are targeted to be completed in 2020 and 2022 respectively.¹²

These capabilities are helping promote growth in Hong Kong's entrepreneurial scene, with the number of start-ups operating in co-working spaces and incubators rising 18 percent year-on-year to 2,625 companies, a 146 percent increase in the past five years, according to a November 2018 survey from InvestHK.¹³



Photo: Alibaba Hong Kong Entrepreneurs Fund

Major Innovation & Technology development milestones



2019

- Additional HKD 28.5 billion allocated to I&T sector initiatives in the 2019/20 Budget¹⁶
- Greater Bay Area Outline Development Plan published
- Hong Kong SAR government awards its first virtual banking licenses¹⁷
- Innovation and Technology Venture Fund (ITVF) announces its first investments of HKD 5.5 million in International Compliance Workshop, and HKD 6.5 million in Yoho Group Holding.¹⁸
- Mainland-Hong Kong Joint Funding Scheme opens for applications, inviting applications for biotechnology and artificial intelligence projects¹⁹
- Open Application Programming Interface framework opens, giving third party service providers access to Hong Kong's banking system²⁰

2020
(planned)

- First phase of Hong Kong's planned commercial 5G network due to be rolled out¹⁴
- Hong Kong SAR government's data analytics platform to become operational¹⁵

2018

- HKAI Lab opens at Hong Kong Science and Technology Park
- Guangzhou–Shenzhen–Hong Kong Express Rail Link and Hong Kong-Zhuhai-Macau Bridge open, increasing Greater Bay Area mobility
- Hong Kong Stock Exchange introduces new listing rules for companies in emerging and innovative sectors²¹
- Faster Payment System (FPS) introduced, providing opportunities for innovation in the fintech sector
- InnoHK R&D clusters focusing on healthcare technologies and AI/robotics established at Hong Kong Science and Technology Park

2017

- Artificial Intelligence Society of Hong Kong launches
- Fintech Association of Hong Kong launches
- Government publishes the Hong Kong Smart City Blueprint, setting out plans to make Hong Kong a world-class smart city within five years²²
- Memorandum of Understanding to develop the Lok Ma Chau Loop into the Hong Kong-Shenzhen Innovation and Technology Park signed²³
- Government identifies four priority sectors of artificial intelligence, biotechnology, fintech and smart city for I&T development²⁴

2016

- First WeWork space opens in Hong Kong
- Innovation and Technology Venture Fund (ITVF) for co-investing in start-ups between private venture capital and government announced²⁵
- Sequoia Capital launches Hong Kong X-Tech Startup Platform, aiming to further support the commercialisation of local technology innovations²⁶

2015

- Innovation and Technology Bureau formed to facilitate the government's I&T development strategy²⁷
- Alibaba Hong Kong Entrepreneurs Fund founded with the mission to support Hong Kong young people in pursuit of their dreams
- MIT Hong Kong Innovation Node launches, with the goal of enriching Hong Kong students' entrepreneurship knowledge and skills



Supporting a dynamic and vibrant start-up ecosystem in Hong Kong

Paul Chan Mo-po

Financial Secretary, Hong Kong SAR Government

As Hong Kong's start-up landscape evolves, the government is scaling up its investment to create optimal conditions for technology innovation including building hardware and attracting talent.

Paul Chan Mo-po, Financial Secretary of the Hong Kong SAR government, says that as innovation and technology (I&T) is key to the economic and social prosperity of Hong Kong, the government must be proactive in its efforts to support local start-ups. "Our mindset is very clear – we are not just regulators and public service providers, but are also facilitators and promoters," he says.

As Financial Secretary, Chan oversees the government's annual budget. The current term of the government has already spent or committed over HKD 100 billion in funding for I&T development. In his annual budget speech in February, Chan emphasised that "technology enterprises and start-ups in particular, are an integral component of the I&T ecosystem" with an important role to facilitate commercialisation and application of research and development (R&D) results as well as develop innovative ideas.

Chan says that Hong Kong must optimise its use of resources to further develop priority sectors, namely artificial intelligence, biotechnology, fintech and smart city. To better support these capabilities, construction of several new major R&D facilities are underway, including the Lok Ma Chau Loop Innovation and Technology Park near the Hong Kong-Shenzhen border and a new Data Technology Hub in Tseung Kwan O.



Our mindset is very clear – we are not just regulators and public service providers, but are also facilitators and promoters



In addition, the government has allocated HKD 10 billion for establishing two InnoHK R&D clusters focusing on healthcare technologies and artificial intelligence/robotics technologies respectively at the Hong Kong Science and Technology Park (HKSTP). The clusters aim to attract institutions that are among the global top echelon in their respective fields to set up research centres and laboratories in these two clusters. The allocation will cover capital expenditure and operation cost of the research centres/laboratories, while research projects undertaken by these research centres/laboratories are to be funded under the government's Innovation and Technology Fund (ITF). An additional HKD 10 billion has also been injected into ITF, which supports various funding schemes that benefit local start-ups.

Tax reform aimed at promoting I&T development also continues. Last year, the government amended the legislation to provide businesses with a 300 percent tax deduction on the first HKD 2 million of R&D expenditures, up from 100 percent under the previous scheme.

Together, R&D clusters and the ITF form a multi-pronged approach to proactively enhance the start-up ecosystem, Chan says. The government's Technology Talent Admission Scheme, introduced last year, further supports this approach by enabling skilled overseas talent to complement the existing base of local entrepreneurs and researchers.

Improving the flow of talent across the Greater Bay Area (GBA) is another critical way the government can support start-ups, Chan says. Recent changes to the Individual Income Tax Law and related arrangements in mainland China have helped to reduce the tax liability for some Hong Kong residents who frequently visit the mainland for work. The Hong Kong SAR government is also looking at ways to collaborate with NGOs and other organisations to better support Hong Kong entrepreneurs who are working in the GBA. For example, in March 2019 the government's Youth Development Fund rolled out a fund-matching scheme to support Hong Kong entrepreneurs looking to start businesses in GBA cities.

Chan adds that another key element to support the entrepreneurial landscape is incentivising venture capital (VC) and private equity (PE) firms to base their operations in Hong Kong. As more VC and PE firms physically locate themselves in the city, it can help local entrepreneurs to gain access to needed management expertise that can help them scale their businesses. “Typically, when VC or PE firms invest in companies, they look at their management structure and try to bring in professional managers, he says. “If we can build a vibrant VC and PE cluster here, this would be useful in terms of helping these growing start-ups to reach the next stage.”

To encourage more funds to domicile in Hong Kong, last year the government changed the Securities and Futures Ordinance to introduce open-ended fund company structure. This year, the government and the regulators are planning to consult the industry on a proposed limited partnership structure which is more popular for PE and VC funds. Chan says the government is also looking at tax and other regulatory solutions to make Hong Kong more competitive as a jurisdiction for VC and PE funds. Meanwhile, changes to the Hong Kong Stock Exchange’s listing rules to allow pre-revenue and pre-profit biotechnology companies to raise funds should also complement the funding landscape, he adds.

Besides financial support and making it easier to do business, Chan stresses that cultivating local talent as well as an entrepreneurial mindset are equally critical for the start-up ecosystem to be truly vibrant. He points out that in the past decade, job choices have been comparatively limited for those not interested in financial services and real estate. In turn, this affects the mentality of parents and the majors that university students choose.

Chan says he hopes the government’s I&T investments can help change people’s attitudes about what career paths they wish to take. “With more and more success stories, and as attitudes towards I&T shift, this will change,” Chan says. “At the same time, the government wants to be more facilitative to support innovative entrepreneurs who are willing to take risks for the benefit of their communities and for society at large.”

“

Typically, when VC or PE firms invest in companies, they look at their management structure to try to bring in professional managers. If we can build a vibrant VC and PE cluster here, this would be useful in terms of helping growing start-ups to reach the next stage

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Hong Kong's innovation and technology focus areas

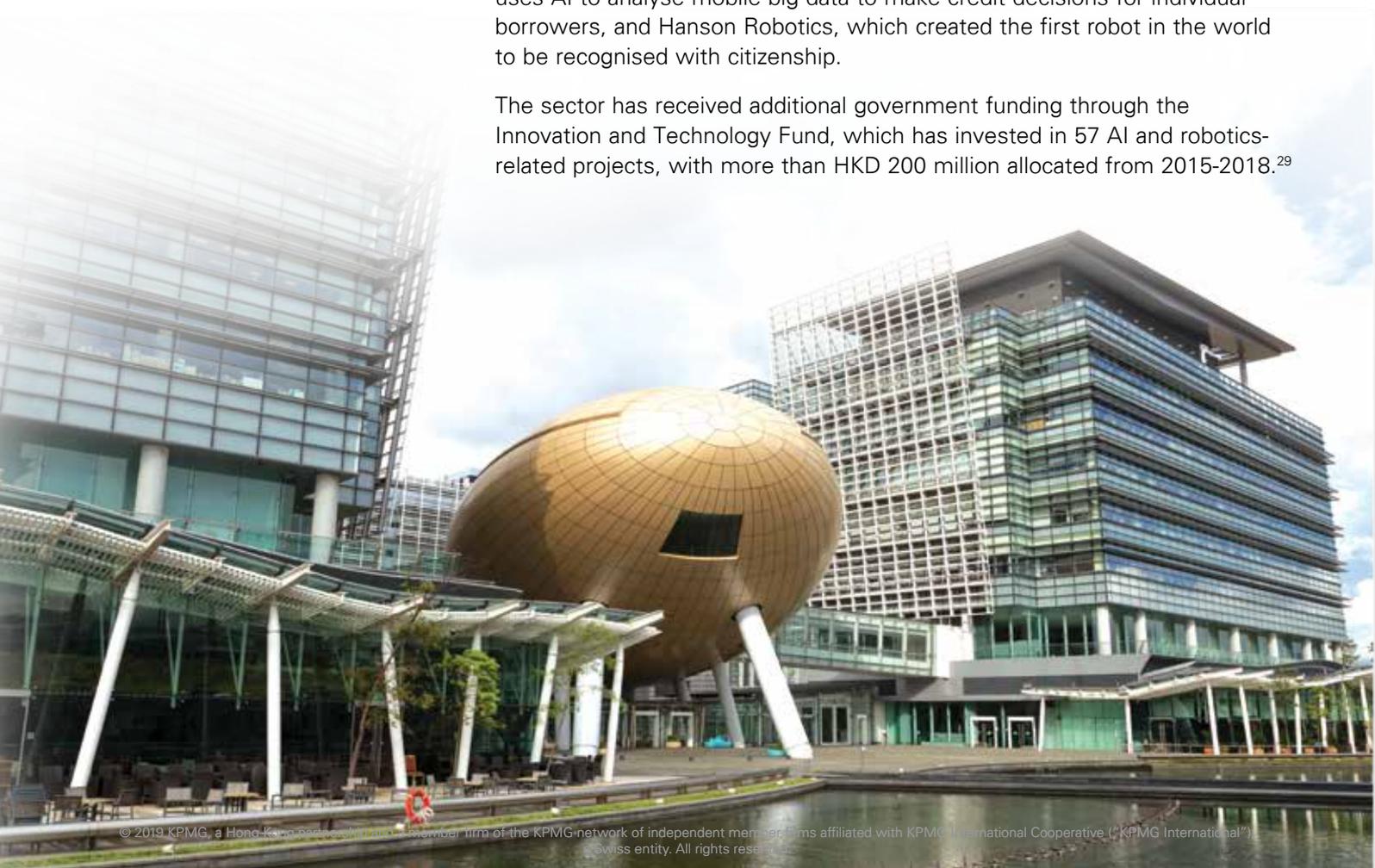
The Hong Kong SAR government continues to invest in the four priority areas for innovation and technology (I&T) development originally identified in 2017, namely artificial intelligence, biotechnology, fintech and smart city. Government expenditures on research and development in these areas is expected to double by 2022.²⁸ This section highlights key achievements and investments in each of these four focus areas, as well as further challenges and opportunities as the start-up ecosystem continues to evolve.

Artificial intelligence

Hong Kong is continuing to develop as an artificial intelligence (AI) hub, backed by government and private-sector funding, improved R&D capabilities and an increasingly supportive ecosystem.

The city is already home to a number of successful AI technology companies. These include SenseTime, which developed a facial recognition system with deep learning, and WeLab, an online lending platform which uses AI to analyse mobile big data to make credit decisions for individual borrowers, and Hanson Robotics, which created the first robot in the world to be recognised with citizenship.

The sector has received additional government funding through the Innovation and Technology Fund, which has invested in 57 AI and robotics-related projects, with more than HKD 200 million allocated from 2015-2018.²⁹





Cindy Chow

Executive Director,
Alibaba Hong Kong
Entrepreneurs Fund

At this current stage, Hong Kong's strengths in AI lie in research taking place at universities. How we make use of this research to apply to commercial ventures is the key for the sector to be able to grow



At Hong Kong Science and Technology Park (HKSTP) and Cyberport, more than 300 start-ups are currently participating in incubator programmes that focus on AI, robotics and data analytics.³⁰ A new research cluster, AIR@InnoHK, focusing on AI and robotics research, is targeted to open at HKSTP in the second half of 2019.³¹

To further promote Hong Kong as an AI innovation hub, the Alibaba Hong Kong Entrepreneurs Fund and SenseTime, with support from HKSTP, launched the HKAI LAB in October 2018.³² The lab helps start-ups to develop ideas and commercialise their technology, as well as promoting knowledge sharing in the field of AI.

In addition, the city is becoming known for its AI R&D capabilities, with universities in Hong Kong collectively ranked third in 2017 in terms of producing the most highly cited and impactful research on AI, according to a Times Higher Education study.³³ The Hong Kong University of Science and Technology was the first Asian institution to be admitted to the Partnership on AI to Benefit People and Society, an international consortium founded by technology giants including Google and Microsoft, in 2017.³⁴

Going forward, further opportunities for start-ups in the sector are likely to be created by targets the government has set to increase its own use of AI in areas including transport, customs inspection and cybersecurity.³⁵

The GBA Outline Development Plan also sets out plans to promote the integration of AI into the real economy and increase cooperation among Hong Kong, Macau and Guangdong, including creating a frontier technological area for AI development.³⁶

Key facts and figures

- Venture investment in AI start-ups totalled HKD 9.75 billion in FY 2018/19
- AI start-ups secured 52 venture funding deals in 2018/19

Source: KPMG analysis

Survey snapshot

45% of entrepreneurs surveyed agree Hong Kong is well positioned to be an artificial intelligence innovation hub.

Source: KPMG analysis

Biotechnology

Hong Kong's academic institutions, healthcare system and government support provide a firm foundation on which to build innovation in the biotechnology sector.

The city is home to a number of life science and biotechnology research institutes, such as the Hong Kong Institute of Biotechnology, a non-profit downstream development laboratory which includes the Biotechnology Incubation Centre for local start-ups,³⁷ and the Biotechnology Research Institute, part of the Hong Kong University of Science and Technology.³⁸

In May 2019, more than 1,600 delegates including Nobel and Turing Laureates joined the Hong Kong Biotech Summit to share their views on the future trends of biotechnology and computer science.

The city's two medical schools are also active in research, with the Li Ka Shing Faculty of Medicine at the University of Hong Kong working in the emerging fields of stem cell and regenerative medicine and biomedical engineering,³⁹ while the Faculty of Medicine at The Chinese University of Hong Kong focuses on cancer, metabolic diseases and non-invasive diagnosis.⁴⁰

Start-ups in the sector also receive support from the Hong Kong Science and Technology Park, which has named biotechnology as one of its key technology clusters, and provides companies with help commercialising their research and innovation. It also hosts an Incu-Bio Programme to accelerate growth for companies working in the field.⁴¹ Health@InnoHK, a new government-funded innovation cluster which will focus on healthcare technologies, is due to open at Science Park in the second half of this year.⁴²

The government's Innovation and Technology Fund provided funding totalling HKD 978.8 million for 495 biotechnology-related projects by the end of June 2018, supporting research into areas such as bioinformatics, molecular diagnostics, and drug and therapeutic discovery.⁴³

Going forward, biotechnology companies are also expected to benefit from measures in the recently published GBA Outline Development Plan to promote cross-border collaboration in the sector, including specific policies and regulations to enhance the management of the cross-boundary use of bio-samples and medical data between R&D institutes and laboratories in the GBA.⁴⁴

Professor Dennis Lo, Director of the Li Ka Shing Institute of Health Sciences, The Chinese University of Hong Kong, thinks full integration with the GBA, and the ability to freely share research and patient data between all cities, will enable great advancements to be made in the field.



Professor Dennis Lo
 Director, Li Ka Shing Institute of Health Sciences,
 The Chinese University of Hong Kong

As the nature of biotech and life sciences research is heavily dependent on research data and clinical samples, GBA integration will help provide more substantial data sets and research samples for studies



“As the nature of biotechnology and life sciences research is heavily dependent on research data and clinical samples, GBA integration will help provide more substantial data sets and research samples for studies,” Lo says.

Changes to the Hong Kong Stock Exchange’s (HKEX) listing regime allowing pre-revenue and pre-profit biotechnology companies to raise funds have also benefited the sector, as Hong Kong positions itself as a capital market hub for the biotechnology industry. According to HKEX, Hong Kong has become the world’s second leading funding venue for listed biotechnology companies. Eight biotech companies have listed on HKEX since the changes were introduced in April 2018.⁴⁵

Despite these advantages, the sector is currently populated mainly by early stage start-ups, with a lack of growth stage and major corporate players, according to Ricky Yin-To Chiu of Phase Scientific International. He explains that more mature companies are also needed in an ecosystem to attract funding and provide mentors and senior management to help guide start-ups at earlier stages.

“Start-ups of different backgrounds would benefit from more support during various stages of their development, which in turn will help the ecosystem here to flourish,” Chiu adds.

Key facts and figures

- **There are 23 biotechnology start-ups currently operating in Hong Kong**

Source: InvestHK, as of November 2018

- **Venture investment in biotechnology start-ups totalled HKD 483.8 million in 2018/19, or 2% of total capital invested**

Source: KPMG analysis

Survey snapshot



36% of entrepreneurs surveyed agree Hong Kong is well positioned to be a biotechnology innovation hub.

Source: KPMG analysis



Fintech

Hong Kong has a well-recognised fintech ecosystem, making it a dynamic location for start-ups in the sector. The state of the ecosystem is reflected in the fact that there are nearly 50 percent more fintech start-ups in Hong Kong than there are start-ups in any other sector, according to data from InvestHK.⁴⁶

Hong Kong-based online brokerage platform Futu Holdings raised USD 90 million when it listed on the US's Nasdaq Stock Market earlier this year. Other major funding rounds completed in the past year include Airwallex, which held a USD 100 million round of funding led by DST global in March, while virtual insurer Bowtie completed a USD 30 million funding round led by Sun Life and Hong Kong X Technology Fund.

Two recent government initiatives introduced since last year's *Transforming Hong Kong Through Entrepreneurship* report are expected to further drive fintech innovation. Faster Payment System (FPS) enables real-time money transfers and payments using a mobile phone number or email address, while the Common QR Code Standard for Retail Payments makes it easier for small and medium-sized enterprises to accept payment using QR codes.⁴⁷

The launch of the first phase of the Open Application Programming Interface framework in January 2019, which gives third party service providers access to Hong Kong's banking system, aims to spur the development of integrated financial services, such as account aggregation apps and price comparison tools.⁴⁸

The city is also becoming a location for challenger banks, with the Hong Kong Monetary Authority (HKMA) awarding the first eight virtual banking licences earlier this year, with more applications currently under review.⁴⁹

The HKMA is also cooperating with the Office of Financial Development Service of the Shenzhen Municipal Government in a number of areas relating to fintech, including creating a soft-landing scheme to support Hong Kong fintech firms establishing a presence in Shenzhen.⁵⁰ The regulator has also signed a Co-operation Agreement with the Monetary Authority of Singapore to promote collaboration on fintech projects, including the development of a cross-border trade finance platform using Distribution Ledger Technology.⁵¹



Arion Yiu
Partner, KPMG China

The use of AI to improve efficiency and provide a greater customer experience within the fintech sector will further increase demand for data scientists and software developers. There will be an ongoing need to train and attract new talent in these areas.



The development of the sector has been aided by three dedicated fintech platforms, namely the HKMA's FinTech Facilitation Office,⁵² the Securities and Futures Commission's Fintech Contact Point⁵³ and the Insurance Authority's Insurtech Facilitation Team,⁵⁴ to promote communication between the sector and regulators. All three regulators have also launched supervisory sandboxes to enable financial institutions to gather data and test products without having to achieve full compliance with supervisory requirements, reducing development costs and expediting the time to launch.

Hong Kong's largest fintech community is located at Cyberport, which houses more than 300 fintech companies working in areas as diverse as blockchain, cybersecurity, big data and wealth management.⁵⁵ In addition, Hong Kong FinTech Week, which last year had 10,000 attendees from more than 60 countries, is one of the largest conferences on the fintech calendar.

In order for Hong Kong to further develop its capabilities as a fintech innovation hub, there needs to be a focus on talent, both home-grown as well as attracting overseas entrepreneurs, KPMG financial services partner Arion Yiu points out. "The use of AI to improve efficiency and provide a greater customer experience will see the demand for data scientists and software developers continue to increase," Yiu says. "Hence, there will be an ongoing need to train and attract new talent in these areas."

Yiu adds that there is huge potential for Hong Kong to leverage its connection to the Greater Bay Area, if there is an aligned framework to address current pain points such as immigration and tax. This could enable businesses to perform R&D and build out solutions in mainland China and use Hong Kong as a base to launch products, he says.

Key facts and figures

- **Hong Kong has 427 fintech start-ups**

Source: InvestHK, as of November 2018

- **Venture investment in fintech start-ups totalled HKD 1.77 billion in 2018/19, amounting to 9% of total capital invested**

Source: KPMG analysis

Survey snapshot

67% of entrepreneurs surveyed agree Hong Kong is well positioned to be a fintech innovation hub.

Source: KPMG analysis



Peter Yan
CEO, Cyberport

Hong Kong’s smart city development has become a breeding ground for innovation and entrepreneurship. Furthermore, Hong Kong’s status as a vibrant international city with strong heritage and connectivity provides ample opportunities for smart living solutions



Smart city

Hong Kong’s development as a smart city innovation hub is underway, with 98 start-ups currently working in this space, according to 2018 figures from InvestHK.⁵⁶

Through the Hong Kong Smart City Blueprint, unveiled in 2017, the government has set a target to develop Hong Kong into a smart city within five years. The Blueprint identifies six major areas in which it will use innovation and technology to achieve this transformation, including developing intelligent transport and traffic management systems, creating green, energy-efficient buildings, and building a smarter government with open data and e-public services.⁵⁷

The private sector has a significant role to play in this transformation, with the Hong Kong Smart City Consortium (SCC), which has nearly 300 members including large companies, major technology providers and entrepreneurs, set up to act as a bridge between government and the corporate sector to implement projects.⁵⁸

The city has also benefited from a number of technology and infrastructure improvements in the past year, with the opening of the Guangzhou-Shenzhen-Hong Kong Express Rail Link and the Hong Kong–Zhuhai–Macau Bridge. Meanwhile, the launch of Faster Payment System (FPS) and the ongoing rollout of electronic identity (eID) cards for residents are enhancing the digital infrastructure.

Additionally, the planned launch of fifth generation mobile communications technology (5G) in 2020 is expected to help boost smart city innovation.⁵⁹ The faster speeds and reduced latency 5G provides will enable better implementation of the Internet of Things (IoT), which in turn will enable big data analysis to be used to find more efficient and effective solutions for problems such as road congestion, pollution and energy efficiency.

Opportunities for start-ups working in the sector will likely be further enhanced by the opening of a Smart Government Innovation Lab this year. The lab aims to explore how IT can be used to improve public services in partnership with the private sector.⁶⁰ The government plans to invite private companies to put forward proposals for innovative IT applications and product suggestions that can be used to address challenges in public service delivery.⁶¹

Hong Kong Science and Technology Park and manufacturer Siemens have also set up a joint Smart City Digital Hub at the Science Park to accelerate the development of smart city applications, assist start-ups and build up the smart city innovation ecosystem.⁶²

Key facts and figures

- **There are 98 smart city start-ups currently operating in Hong Kong**

Source: InvestHK, as of November 2018

- **Venture investment in smart city start-ups totalled HKD 2.28 billion in FY 2018/19, amounting to 11% of total capital invested**

Source: KPMG analysis

Survey snapshot

48% of entrepreneurs surveyed agree Hong Kong is well positioned to be a smart city innovation hub.

Source: KPMG analysis

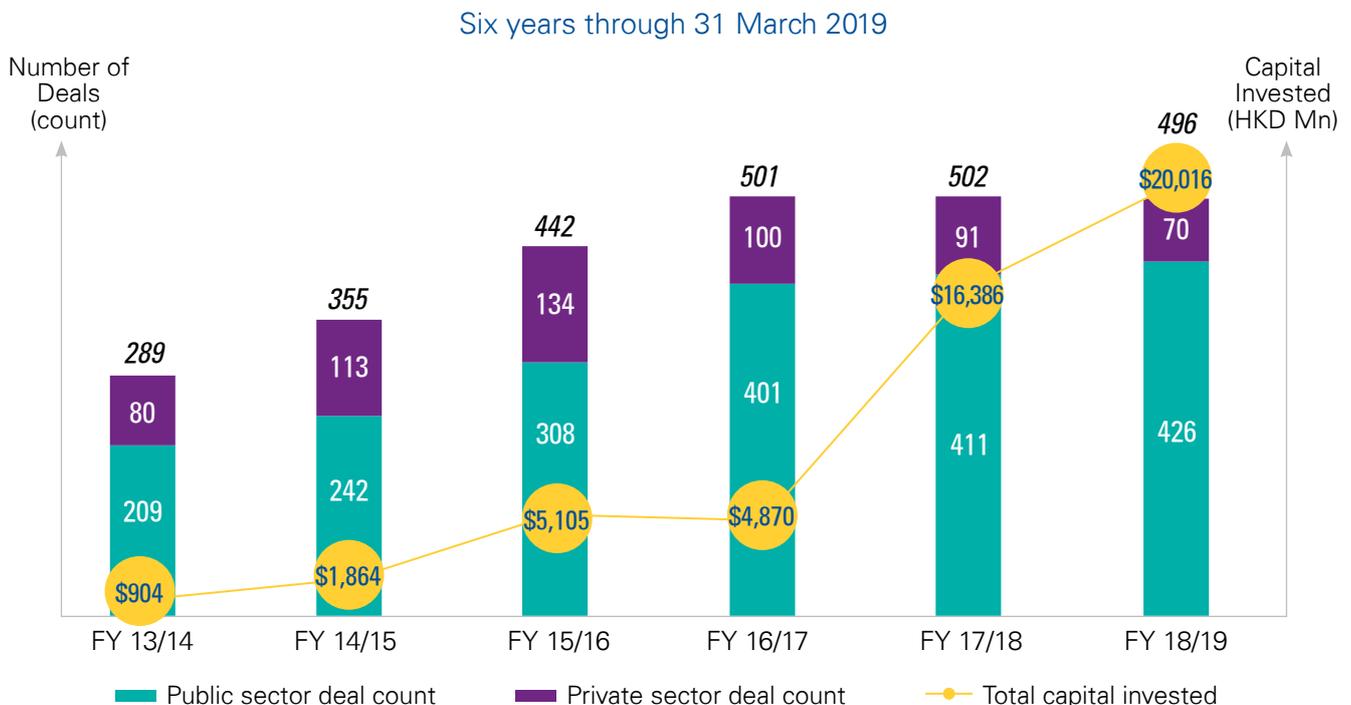


Venture capital funding for Hong Kong start-ups: long-term trends

Venture capital (VC) investment in Hong Kong-based start-ups has grown at a compound annual growth rate (CAGR) of 85.8 percent over the last six years, according to KPMG analysis of investment data from sources including Alibaba Hong Kong Entrepreneurs Fund, Cyberport, Hong Kong Science and Technology Park and Pitchbook.

HKD 20.02 billion was invested in Hong Kong-based start-ups by private and public VC funds in the financial year ending March 2019. The rate of investment growth has risen sharply in the past two years (see Figure 22), with both total capital investment and average deal size increasing compared to previous years.

Figure 22: Venture capital investment in Hong Kong-based start-ups, by deal count and total capital invested



Source: KPMG analysis

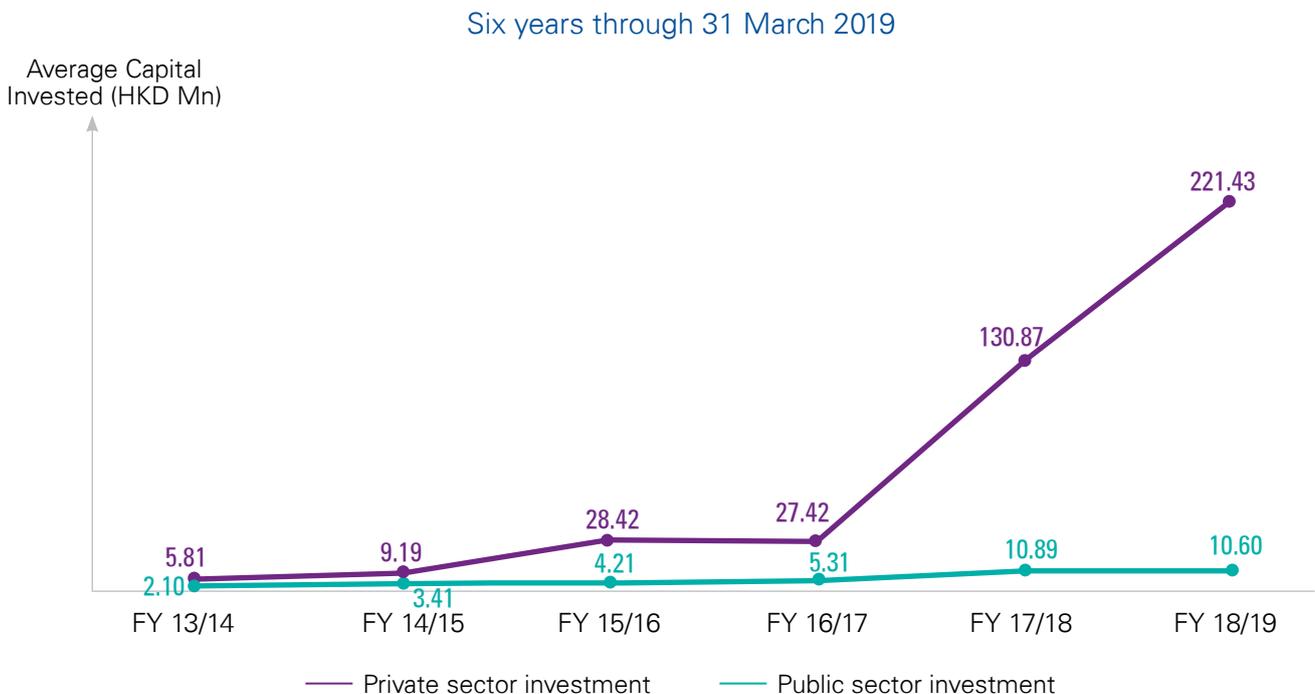
Note: Financial years measured are April 1 to March 31

While investment value has increased, the volume of deals has had a different profile, consistent with the global trend of higher overall investment and average deal size but fewer deals.⁶² Average deal size by private funds increased 169 percent to HKD 221.43 million year-on-year, despite overall deal volume in 2019 experiencing a 1 percent decrease. Meanwhile, private fund average deal size has grown more than 35-fold since 2014 (see Figure 23).

Meanwhile, the value and volume of government investments have steadily increased every year since 2014, and average deal size has risen from HKD 2.1 million to HKD 10.6 million during the last six years. In total, 1,997 public sector VC investments totalling HKD 13.7 billion have been made over the period. In 2019, 86 percent of investment volume was from the government, contributing 22 percent of investment value.

Over 70 percent of funding in 2019 was directed to the four I&T priority sectors – artificial intelligence (AI), smart city, fintech and biotechnology – a marked increase from 54 percent in 2017. AI attracted HKD 9.75 billion (47 percent of funding), followed by smart city ventures at HKD 2.28 billion and fintech start-ups at HKD 1.77 billion. Meanwhile, biotechnology lags behind in comparison, with the sector receiving HKD 483.8 million in funding.

Figure 23: Average deal size of venture capital investments in Hong Kong-based start-ups, 2013-2019



Source: KPMG analysis

Note: Financial years measured are April 1 to March 31

Notably, the public-private split of funding significantly differs for the biotechnology sector as compared to other sectors. 97 percent and 90 percent of investment respectively for AI and fintech ventures came from private funds. Likewise, 81 percent of funding directed at smart city start-ups came from the private sector. In contrast, private investment made up 10 percent of biotechnology funding.

“The rising amount of capital invested by private VC firms in Hong Kong start-ups as well as increasing average deal sizes are positive signs that Hong Kong’s funding landscape is maturing. It is also encouraging to see firms in the four priority innovation areas gaining a greater share of capital, as this will encourage more VC funds to invest in these sectors,” Eric Lau, Partner, KPMG China says. “However, the findings suggest that Hong Kong entrepreneurs still need to be more ambitious in their business aspirations – and better articulate how to differentiate their businesses – in order to take advantage of the funding available.”

Figure 24: Leading sectors for venture capital investment in Hong Kong, by capital invested

FY16/17			FY17/18			FY18/19		
	B2B Software/ Services	44%		B2B Software/ Services	30%		Artificial intelligence	49%
	Smart city	25%		Fintech	21%		Smart city	11%
	Entertainment/ Media	8%		Artificial intelligence	20%		E-commerce	11%
	Consumer electronics/ products	7%		Smart city	15%		Fintech	9%
	Fintech	5%		Biotechnology	4%		B2B Software/ Services	8%

Source: KPMG Analysis

Note: Financial years measured are April 1 to March 31



Suggestions to further enhance Hong Kong's entrepreneurial landscape

To further cultivate a strong sense of purpose and improve Hong Kong's innovation capabilities and entrepreneurial ecosystem, we have the following recommendations:

- Both government and the business community should expand offerings to better support growth stage and mature stage start-ups
- Founders should prioritise sourcing formal funding by elevating their financial ambition, accelerating global market entry and engaging mentors throughout the lifecycle
- International private equity and venture capital firms should utilise changes to profit tax exemptions announced for Hong Kong, and the government should continue to promote these exemptions as well as the other benefits Hong Kong offers as a regional fund management centre
- All stakeholders should further focus on enabling open data, technology transfer and commercialisation of research in the priority sectors to support Hong Kong's digital transformation
- Hong Kong should better leverage the Greater Bay Area as a logical and accessible talent pool
- As founders build technology start-ups, they should ensure they are also building a people business that enables growth
- Government agencies, corporates and other industry players should better educate the wider community on the irreplaceable value of start-ups

Both government and the business community should expand offerings to better support growth stage and mature stage start-ups

As start-ups transition from early stage to growth stage, the nature of support services they need changes. Furthermore, as they traverse the "valley of death" where there is limited cash-flow but increasing operational costs, it is critical that these start-ups receive sufficient support.

The study identifies that the effectiveness of current services such as co-working spaces, legal services, and research and development support services are significantly less effective for growth stage start-ups.

To address this imbalance, incubators and other services should consider the emerging requirements of growth stage start-ups and expand offerings to meet this specific demand.

For example, hackathons, incubators and accelerators tend to be more beneficial for companies collaborating with early stage start-ups. For corporates, these events offer a kick-start to their own internal innovation programmes and signal a culture of innovation. In return, early stage start-ups gain insights, experience and access to real-world problems. For these events to be effective for growth stage start-ups, there needs to be stronger commitment by the sponsor for opportunities to continue the commercial relationship after these events and be better compensated for their investment of time. In part, this also means the mindset and relationship of corporates to start-ups needs to evolve. Corporates need to leverage access to start-ups through co-design engagement to be less about ‘innovation events’ rather than driving structural transformation.

Another area for consideration is the changing mentoring needs for founders. While 63 percent of early stage start-ups identify mentoring as effective, this changes to 55 percent for growth stage. Government and business should proactively encourage mentoring for skills beyond just technical and business establishment. For example, providers should consider how to help growth stage businesses when they require advice on topics such as handling expanding teams, establishing and maintaining culture, how to effectively enter new markets, corporate branding, sustaining business relationships, product brand architecture, marketing strategies or acquiring a new leadership team.

Hong Kong’s well-established and dynamic financial services industry provides a clear advantage for innovation in the fintech sector. For the other three strategic sectors – artificial intelligence, biotechnology and smart city – long term investments and concerted efforts are needed to sustain their development and growth in the city.

Given that mainland China GBA cities are focusing on different priority sectors than Hong Kong (as defined in the GBA Outline Development Plan), Hong Kong-based businesses with specific knowledge in those industries should also actively explore how they can use their expertise and international network to help advance start-ups in the GBA.

Founders should prioritise sourcing formal funding by elevating their financial ambition, accelerating global market entry and engaging mentors throughout the lifecycle

Entrepreneurs responded to this year’s study by saying they plan to increase use of formal sources of funding in the next three years. Yet, the findings suggest they are still heavily reliant on informal funding, with 70 percent currently using personal savings.

Reasons identified for not using formal funding sources include the perception that it was not needed or that they would not be qualified to receive funding. While it is possible for some start-ups to be internally funded, the high percentage is an indicator that the business model or sales ambition is not sufficient to grow and scale to a level which would attract capital from a competitive global market. Furthermore, it indicates a potential mismatch between what types of business models founders and VC fund managers consider “innovative” and “highly scalable”.

As start-ups expand beyond their home market, they need to better understand the local market conditions and competitive landscape. This means founders must increase their focus on their business model from the outset – including building a realistic financial model setting out cash burn and path to profitability, with supportable and realistic assumptions.

Founders should consider enlisting experienced mentors to provide assistance before commencing on capital raising. This will help provide both an objective external perspective to help validate and challenge financial models, provide input into deal terms and help provide an interface between the business and the prospective investor. Importantly, this external assistance can also help drive the pace of contracting and ensure funding is adequate for the round. Fundraising often takes significantly more time and energy to raise capital than founders anticipate, which detracts from the building of the core business.

Mentors can also play an important role in helping founders understand what is a viable business model as well as the value and role of funding sources and where to start. This is key particularly among growth stage companies seeking pre-Series A and Series A venture capital. Sourcing qualified mentors and further empowering government agencies such as Cyberport and Hong Kong Science and Technology Park or other incubators to better educate start-ups about the fundraising process can help address these gaps.

It is equally vital to continue to attract quality mentors to Hong Kong to help local start-ups scale. One potential way for innovation parks to help is through attracting successful local and overseas entrepreneurs after they exit their business and look to take a few months off before their next venture. These entrepreneurs could be invited to Hong Kong to join local accelerators to share their knowledge and experience.

To achieve greater growth ambitions, entrepreneurs should also consider the role of mentors in helping them capitalise on opportunities in Asia, particularly in emerging markets that will benefit from China's Digital Silk Road. The skills and experiences sought from these mentors will differ by target market and entry strategy.

The study suggests that entrepreneurs' expected future share of revenue from China will increase but revenue from the rest of Asia Pacific will remain flat. As part of its wider Belt and Road (BRI) Initiative, the Digital Silk Road aims to build internet infrastructure and promote connectivity and common technology standards among the countries currently participating in the BRI. The development of the Digital Silk Road will undoubtedly affect the value chains throughout the region. As Hong Kong start-ups develop their expansion strategies, they should proactively evaluate the potential opportunities along the Digital Silk Road and how they can be a part of these value chains.

International private equity and venture capital firms should utilise changes to profit tax exemptions announced for Hong Kong, and the government should continue to promote these exemptions as well as the other benefits Hong Kong offers as a regional fund management centre

In April 2019, Hong Kong enacted new changes for funds registered privately offer funds and widened the application scope of profit tax exemptions. The new exemptions are a positive step that bring Hong Kong's treatment in line with other innovation hubs such as Singapore.

These changes provide a new opportunity for global VC and PE managers to reassess their global strategy and take the benefit of Hong Kong as a regional fund management centre.

Additionally, the government is looking to promote Hong Kong as a fund domicile jurisdiction, particularly for mainland China fund managers, and is evaluating whether to make changes to the Limited Partnership Law, which would positively affect both the VC and PE sectors.

During the consultation period for these additional changes, there is further opportunity for government to promote the new profit tax exemptions and further review introducing new exemptions to make Hong Kong even more attractive. All stakeholders should provide proactive and positive input to ensure the policy outcome provides the greatest differentiated advantage.

All stakeholders should further focus on enabling open data, technology transfer and commercialisation of research in the priority sectors to support Hong Kong's digital transformation

As Hong Kong digitally transforms, data strategy is becoming increasingly important. While many local businesses are aware of the potential, they tend to have a fragmented approach – focusing on experimentation or data pilots rather than making business-driven or strategic data decisions. Better access to larger and more diverse data sets and is crucial but also means setting out frameworks to define data ownership and data sovereignty.

The start-up community can play a key role alongside established technology corporate providers to change this. Firstly, they can challenge existing thinking on how and where corporate clients should utilise data to realise business goals. Secondly, they can provide new technical capabilities and platforms to facilitate data sharing and data enrichment. Finally, they can act as a catalyst and gateway for government data and help prioritise the data sets which will provide the greatest value. The Innovation and Technology Bureau (ITB) has played an instrumental role in making government data sets available, but the richness of public data available across agencies remains limited.

The digital transformation of Hong Kong into a smart city will also be enhanced through further streamlining the IP and technology transfer process. Similar prioritised focus should also be given by academia and other institutions on the other priority sectors, namely artificial intelligence, fintech and biotechnology.

Furthermore, tax can play a role in supporting technological advancement and innovation in Hong Kong for growth stage start-ups. While the Hong Kong SAR government's enhanced tax deduction for qualifying research and development (R&D) expenditures is a welcome measure, start-ups usually do not generate much profit or are even in loss-making when the R&D activities are on-going. Under current tax legislation, tax losses of a Hong Kong taxpayer can only be carried forward until fully utilised. To encourage more investment in R&D, government should consider allowing tax losses generated from R&D activities to be cashed out or other financial mechanisms and support cash flow for growth stage companies.

Hong Kong should better leverage the Greater Bay Area as a logical and accessible talent pool

The Greater Bay Area (GBA) offers great potential to Hong Kong. It provides a market of almost 70 million consumers, an opportunity for Hong Kong start-ups to contribute to the success of companies in the 9+2 cities, and access the talent, capabilities and entrepreneurial culture the other cities offer.

This year's study identifies that the talent accessible to Hong Kong start-ups is improving but remains a key challenge, particularly for growth stage companies. In order for Hong Kong to become a successful innovation hub,

addressing this gap – both by cultivating domestic talent as well as attracting overseas entrepreneurs and skilled workers – is a key priority.

Reform to Hong Kong's education system will play a role, but it is more of a long-term solution, as change will be too gradual to sufficiently address current talent gaps. Therefore, Hong Kong should increasingly leverage the GBA as a logical and accessible talent pool. To do so requires a commitment of local start-ups as well as alignment of frameworks to address differences such as tax and immigration. For example, pure research could be conducted by Hong Kong's universities and innovation hubs, prototyping and mass production could take place in other GBA cities, and then products could be launched in Hong Kong prior to global release. To consider the Greater Bay in such a way provides benefits to all parties.

Another opportunity to enhance Hong Kong's talent pool is through further relaxing restrictions for matching funding in the government's Reindustrialisation and Technology Training Programme (RTTP), part of the wider Technology Talent Admission Scheme. The RTTP subsidises local companies on a 2:1 matching basis to train staff in advanced technologies. However, under current requirements, trainees must be Hong Kong permanent residents. Extending the scheme to non-permanent residents and GBA residents working in local companies would provide additional incentives for non-local talent to work in Hong Kong as well as give start-ups more flexibility and support to train their employees.

As founders build technology start-ups, they should ensure they are also building a people business that enables growth

This year's study suggests that Hong Kong start-ups' talent capabilities are improving but a lack of suitable talent continues to be a key challenge, particularly for companies in the growth stage. Furthermore, less than half of entrepreneurs in this year's study agree that entrepreneurship is a well-respected career path – despite the fact that a majority think it is feasible and sustainable.

For most founders, building a start-up is a work of passion. The focus is more often on developing new technology, finding funding, scouting for clients and navigating administrative requirements, but this can be at the expense of the developing its workforce in a structured way. To build businesses which can compete against corporates to attract and retain talent and be seen as a desirable in the broader community, this needs to change.

As the global workforce increasingly makes employment decisions based on a company culture, career fulfilment and work ethos, in a tight employment market, founders will need to struggle to attract talent away from larger corporations. Indeed, entrepreneurs should consider how to define their employee value proposition by reinforcing the potential benefits of empowerment, individual contribution and independence a start-up offers.

Another key factor is strategic workforce planning – identifying the roles and capabilities that are needed in the one-to-two-year horizon. This is integral to ensure the organisation has the capabilities to effectively run as it grows. In many cases, start-up founders are the ones taking on human resources roles, but they often lack the experience to manage people and develop relevant HR frameworks – which can lead to talent challenges as they transition beyond early stage.

Finally, defining a high-level career framework that gives staff the comfort that they can develop their career within the organisation is a key part of this process. This framework should also take into account overseas hires and staff working remotely from offshore locations. Start-ups should also offer training to staff to nurture skills and capabilities that are relevant to the business and also aligned with employees' career aspirations.

Government agencies, corporates and other industry players should better educate the wider community on the irreplaceable value of start-ups

A notable and persistent gap in Hong Kong's start-up ecosystem is the low level of support from family or friends to start a business. This findings indicate that a further mindset change is needed among the public to encourage wider acceptance of entrepreneurship as a career option.

In reality, start-ups provide unique value to drive innovation and technology in Hong Kong, offer a greater diversity of career options and will play a role in increasing creativity and fulfilling the ambitions of Hong Kong's next generation of leaders.

This mindset gap must be addressed. To do so, the government should utilise various channels and agencies to expand its communication and outreach to the community about the value that start-ups bring to Hong Kong. For example, local organisations such as the The Hong Kong Productivity Council, Hong Kong Trade Development Council, Hong Kong Science and Technology Park and Cyberport, and InvestHK could align and increase their efforts to share success stories and examples of how start-ups in various sectors are making an impact on the overall economy and I&T landscape.

Furthermore, multinationals and other corporates who are working with Hong Kong-based start-ups to transform and enhance their businesses should be more proactive to share these stories with the wider community. This will help widen the base of role models that founders will look to when starting new businesses or expanding their existing start-ups beyond the prototype stage. The government can also play a role to encourage corporates to share these stories.

The paradigm of entrepreneurship is that there is no specific formula to build a successful venture. Aspiring entrepreneurs must therefore be resourceful and pragmatic when facing new challenges and solving problems to create value for customers.

Likewise, being an entrepreneur also means learning and growing from failure. While in other countries people are proud to share their failures, there might still be a stigma on failure on Hong Kong. It is necessary for the business community to encourage entrepreneurs to take risks, recognise their experience and increase focus on the wisdom earned.

Corporates can also play a role in changing attitudes. When hiring staff, corporates should be open-minded to consider candidates who have past entrepreneurial experience even if they failed in those ventures – to help turn "failure" into "recognised experience".

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About Alibaba Hong Kong Entrepreneurs Fund

The Alibaba Hong Kong Entrepreneurs Fund is a not-for-profit initiative launched by the Alibaba Group in 2015. The Fund invests in start-up companies with a Hong Kong nexus by encouraging innovation and entrepreneurship among the city's young. We also support the application of both research and innovation for the betterment of the city's community. As part of our investment program, we provide Hong Kong-based entrepreneurs with investment capital and strategic guidance to help them grow their businesses and penetrate global markets, by utilizing Alibaba's vast ecosystem. We also nurture Hong Kong's younger generation by running an internship program of our own. This program offers Hong Kong's graduates and students at tertiary institutions a chance to learn with us by providing valuable internship opportunities at Alibaba Group and our affiliate companies. We further support other organizations that share our mission of instilling entrepreneurship and creativity. For more information, please visit: <https://www.ent-fund.org/>.

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