Google
Smarter Digital City

Rocketing to new heights

Accelerating the development of Hong Kong's startup ecosystem

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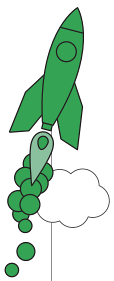

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Outlook for the Hong Kong startup ecosystem

"Although Hong Kong is a small market, it is a proxy to bigger markets. Our competitive edge is our access to the GBA's US$1.7tn GDP market and we have an important role of connecting startups from the rest of the world to China and China to the rest of the world."

Albert Wong
CEO
Hong Kong Science & Technology Parks

"Hong Kong has successfully leveraged its strength in financial services to develop FinTech, from Virtual Banks to Virtual Insurance to Virtual Assets, and we should leverage this FinTech success to expand into other areas. For example, leveraging payments in FinTech to develop RetailTech, ArtTech, Smart Logistics and other Smart Living and Digital Entertainment areas."

Peter Yan
CEO
Cyberport Hong Kong

Foreword

Over the past few years, we have seen a rapid acceleration in digital transformation across all industries in Hong Kong. This is being driven by a number of factors, including the COVID-19 pandemic, the growing demand for convenience and efficiency, and the increasing availability of digital technologies such as AI, Web3 and more.

Startups are playing a key role in Hong Kong's digital transformation. They are developing innovative new products and services that are helping businesses and consumers alike to benefit from digital technologies. However, startups also face a number of challenges, such as access to funding, talent, and market opportunities. This report provides a comprehensive overview of the startup ecosystem in Hong Kong. It identifies the key challenges and opportunities facing startups, and it offers recommendations on how to support the growth of the ecosystem.

The report is based on a survey of over 200 startups in Hong Kong. It also draws on insights from interviews with industry experts and policymakers. I would like to thank our research agency, KPMG, for the great work on conducting this report. Their insights and analysis have been invaluable in providing a clear picture of the startup ecosystem in Hong Kong. We hope that this report will provide valuable insights to startups, investors, policymakers, and other stakeholders in Hong Kong's digital economy.

We are committed to supporting the growth of Hong Kong's startup ecosystem. We will continue to work with partners to provide startups with the resources and support they need to succeed. **We look forward to seeing the continued growth and development of Hong Kong's startup with strong public and private partnership across the ecosystem in the years to come.**

Michael Yue
General Manager, Sales & Operations
Google Hong Kong

Executive Summary (1/2)

Chapter	Details
Overview of the startup ecosystem	• Growing digitalisation demands call for more innovative startup solutions • Various sectors are adopting AI technology to improve customer experience, operational efficiencies and comply with regulatory requirements • However, access to funding and attracting talent remain the primary challenges of the startup ecosystem
Funding	• Funding is a major challenge for early-stage startups, particularly at seed level where capital is key to help startups to ramp up product production and find product market fit • The government could take the lead to further facilitate the take-up of public funds, firstly by increasing the co-investment scheme with the private sector and enhancing the co-investment criteria • Consideration could be given to establishing a coordination unit to streamline the approval process
Talent	• Despite a shortage of local STEM talents, many graduates and young professionals are willing to work in startups, and job skill intermediaries can help bridge the skills gap • In addition, the public sector can encourage enterprises to establish technical teams to attract local and foreign talents with supportive policies • Reskilling programmes should not only focus on technical training related to artificial intelligence (AI) and machine learning (ML), but also how to apply such technologies in the industry to create solutions

Executive Summary (2/2)

Chapter	Details
Digital adoption	• While corporates are becoming more receptive to collaborating with startups, they should allocate a portion of their budget to setting up more trials, which will help build a greater tolerance of failure and more effective collaborations in the long run • Quasi-government organisations could take the lead in building more use cases to encourage adoption of startup technologies • The public sector could streamline the existing procurement process through digitalisation, such as e-signature or pre-fill technology functions • In addition, the coverage of sandboxes could be extended to a wider range of FinTech topics, while FinTech startups should be allowed to use sandboxes without partnering with established financial institutions
Technology enablement	• Corporates and the public sector can help startups adopt advanced technologies by providing startup exclusive Technology Voucher Programme (TVP) subsidies, and application and development infrastructure programmes • Startup should explore third-party solutions in infrastructure or application development to overcome cost-related challenges • FinTechs should enhance their AI/ML capabilities by working with corporates that can provide better access to data sources and talents; identifying when to leverage the technology of third-party providers is the key to success
Growth	• Startups need to look beyond the Greater Bay Area (GBA) and Southeast Asia when expanding into new markets and start considering emerging opportunities in regions such as the Middle East • Hong Kong's potential accession to the Regional Comprehensive Economic Partnership (RCEP) and corporates' support for startups on overseas Proof-of-Concept (POC) testing will help startups' overseas expansion • Startups should leverage existing incubation programmes to expand overseas • Consideration could be given to establishing establish more cross-border sandboxes to enable FinTech startups to adapt their solution to regulations in other markets, with a focus on Southeast Asia, East Asia and the GBA

Research Methodology

Focus Areas

The report analyses the challenges and opportunities for startups in five key areas, with a deeper dive into each of these for the FinTech sector

Funding
- Funding trends in Hong Kong
- Sourcing of private and public funding

Talent
- Overcoming shortages of skilled talent in Hong Kong
- Willingness of younger generation to work for startups

Digital adoption
- Pursuing collaborative innovation with public sector and corporates

Technology enablement
- Adoption of new technologies by startups
- The role corporates and public sector can play in supporting innovation

Growth
- Markets outside Hong Kong that startups have expanded into
- Initiatives public sector and corporates can take to support startup expansion

Research Methodology

Google Hong Kong commissioned KPMG to conduct in-depth qualitative interview with startups founders, policymakers, C-suite executives from multinational corporates and VC founders between 25 April to 25 June 2023. Two online surveys were also conducted: one seeking insights from startup founders and executives (from 18 April to 19 May 2023) and the other focusing on the views of students, graduates and young professionals (from 18 April to 8 May 2023)

In-depth Interviews

n = 25

Focusing on the perspectives of stakeholders in Hong Kong's startup ecosystem across the five focus areas

- n = 6 Startup founders
- n = 11 Policymakers
- n = 4 C-level executives
- n = 4 VC founders

Startup Founders/ Executives Online Survey

n = 258

Gain insight into the views of startup founders and executives on their current progress, the challenges they encounter and their future plans

- n = 146 Early-stage startups*
- n = 112 Growth-stage startups*

- n = 81 FinTech respondents
- n = 177 Non-FinTech respondents

Students/Graduates/ Young Professionals Online Survey

n = 300

Seek views from students, graduates and young professionals under the age of 35 on their eagerness to start or join a startup, as well as their thoughts on reskilling programmes and the importance of various skillsets

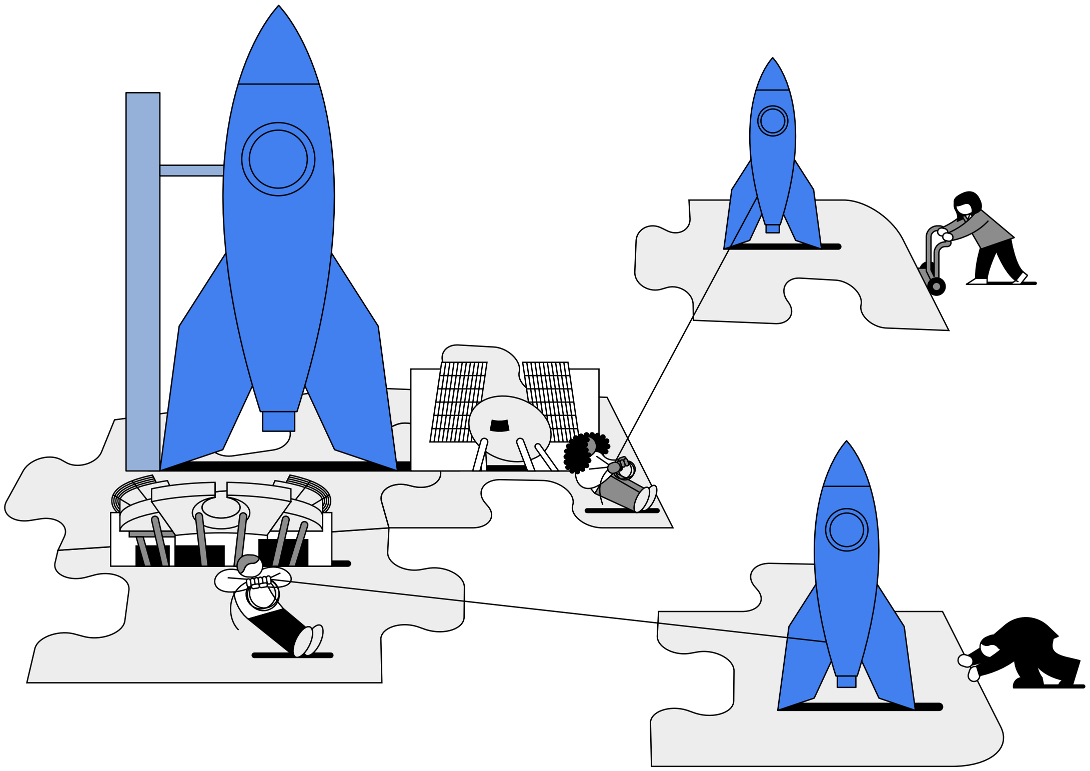
Note: * Early-stage refers to startups that are either prototyping, developing an initial concept or having rolled-out a product and achieved its first sales, growth-stage refers to startups that are expanding, have matured or may potentially exit

Glossary

Abbreviation	Term
AI	Artificial Intelligence
APAC	Asia Pacific
API	Application Programming Interface
AR	Augmented Reality
BU	Business Unit
CAGR	Compound Annual Growth Rate
CDI	Commercial Data Interchange
CRM	Customer Relationship Management
DLT	Distributed Ledger Technology
FI	Financial Institution
FSS	FinTech Supervisory Sandbox
GBA	Greater Bay Area
HKMA	Hong Kong Monetary Authority
HKSTP	Hong Kong Science & Technology Parks Corporation

Abbreviation	Term
HKTDC	Hong Kong Trade Development Council
IA	Insurance Authority
IFSA	International Financial Service Authority
IPO	Initial Public Offering
LLM	Large Language Model
MAS	Monetary Authority Singapore
ME	Middle East
ML	Machine Learning
MNC	Multinational Corporation
NFT	Non-Fungible Token
NLP	Natural Language Processing
OASES	Office for Attracting Strategic Enterprises
OCR	Optical Character Recognition
OGCIO	Office of the Government Chief Information Officer

Abbreviation	Term
POC	Proof of Concept
PSTS	Public Sector Trial Scheme
RCEP	Regional Comprehensive Economic Partnership
R&D	Research and Development
ROI	Return on Investment
SEA	Southeast Asia
SFC	Securities and Futures Commission
SME	Small & Medium-sized Enterprises
STEM	Science Technology Engineering Mathematics
TPP	Third-Party Provider
UX	User Experience
VC	Venture Capital
VR	Virtual Reality



1.0 Overview of Hong Kong's Startup Ecosystem

Customer expectations, operational efficiencies and financial regulatory requirements drive digitalisation demand

Rising customer expectations

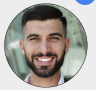
With customer expectations continuing to increase, businesses are accelerating their adoption of technologies from startups, including AI, to collect and analyse customer data. AI-powered tools such as predictive analytics are becoming increasingly popular in this regard, enabling businesses to automate customer interactions and drive targeted marketing campaigns

Growing need to improve operational efficiencies

Startups are leveraging AI technologies to automate repetitive and time-consuming tasks, such as data entry, processing and analysis. By automating these tasks, businesses can reduce the need for manual labour, improving efficiency and productivity

Evolving regulatory requirements

Hong Kong's regulations are constantly evolving to address emerging risks and challenges, and businesses are adapting by increasing their adoption of technology and startup solutions. In the financial services sector, regulatory initiatives such as the HKMA's FinTech 2025, and the IA's InsurTech Sandbox and Fast Track programme are promoting innovation and facilitating digital transformation



"Startup applications present compelling advantage across operational functions, risk management, and customer engagement domains.

Medhy Souidi, Head of Transformation & Ecosystems, DBS

The government has said it is supportive of Web3 and crypto, but clear regulation should be set in stone and the progress on that needs to be accelerated.

David Chang, Partner, MindWorks Capital

Hong Kong has RegTech players that are emerging, which because of the heavier regulation might be one area to look at.

Hing Cheng, Executive Director of Corporate Development, Gobi Partners Greater Bay Area

Regulation on virtual assets has created certainty. It has helped startups to plan their strategy and have a more sustainable business model."

Gabriel Kung, Chief Commercial Officer, Bowtie

Various sectors are going through digital transformation, propelled by AI technology adoption

Startups are increasingly turning to AI technology to meet increasing demand for digitalisation across various sectors

Banks
- Risk management and fraud detection
- P2P payments
- Digital banking (e.g. online account opening)

Health and Biomedical
- Patient electronic health records
- Medical imaging and diagnosis
- Predictive models for disease diagnosis

Insurance
- Automated underwriting
- Digital claims processing (e.g. smart contract)
- Personalised insurance engine

Retail
- AR/VR store for customer experience (omnichannel)
- Personalised (product) recommendations
- Customised marketing campaigns

Investments
- Algorithmic trading
- Robo-advisory (personalised investment advice)
- Cryptocurrency training/virtual asset trading platform

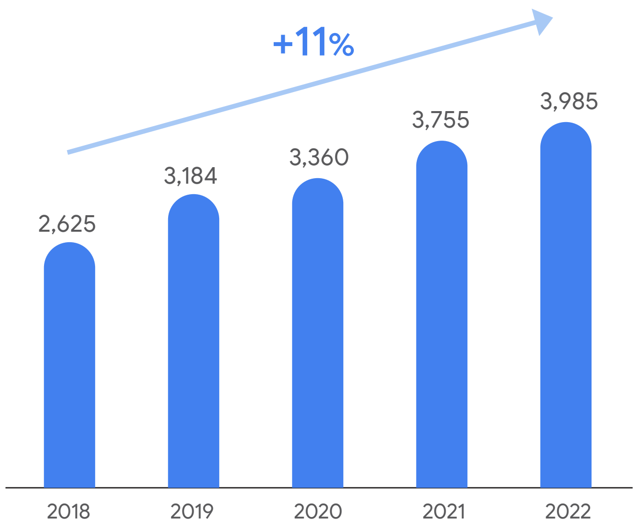
Supply Chain
- Supply chain traceability
- Route optimisation
- Product defects and quality issues

Security
- Network traffic
- Fraud detection
- Threat detection and incident response

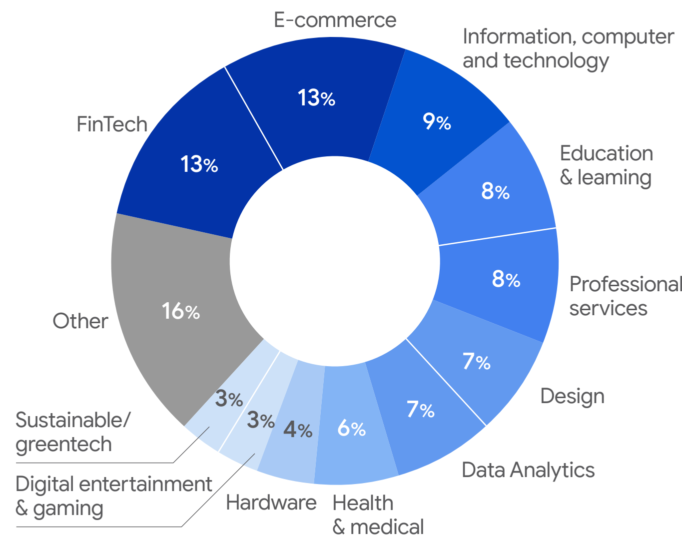
Manufacturing
- Monitor inventory levels
- Predictive maintenance models
- Demand patterns

The Hong Kong startup ecosystem is growing fast

The number of startups in the ecosystem has been growing at a CAGR of 11% over the past five years[1]



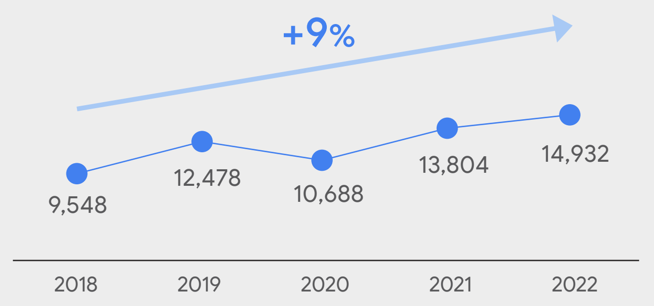
Hong Kong startups operate across a diverse range of industries, with the largest representation in FinTech and E-commerce[1]



Source: (1) InvestHK
Note: Other industry categories found in Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem include Supply Chain Management, LogTech, FoodTech, Social Innovation, RetailTech, Smart City, BioTech, Web3

The startup ecosystem in Hong Kong attracted over US$ 32bn in private funding over the past five years

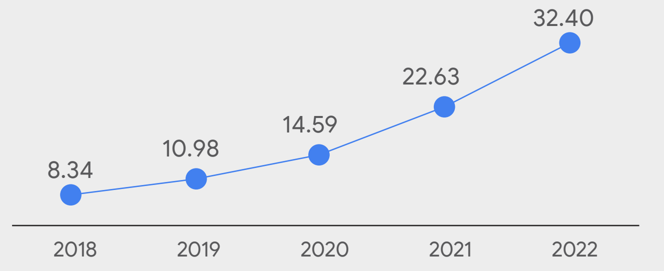
No. of people employed in the startup ecosystem[1] (2018-2022)



- Hong Kong's startup ecosystem employs just under 15,000 people across a wide range of sectors, a total that has grown at a 9% CAGR over the last five years
- The startup ecosystem has created more job opportunities for the educated labour force, diversifying Hong Kong's economy
- Highly skilled local talents (e.g. R&D talents in Biotech or AI) can develop their skill sets in industries outside the traditional sectors

"More talents are going into the tech industry."
Henson Tsai, Founder & CEO, SleekFlow

Amount of private funding (cumulative)[2] (US$ bn, 2018-2022)



- The ecosystem has attracted US$ 32bn in private funding over the past five years, which is expected to increase further given the growing demand for digitalisation
- The growing ecosystem further attracts capital inflows and investment to Hong Kong

"On a macro level, private investment has been growing at a high speed over the past six to seven years."
Albert Wong, CEO, Hong Kong Science & Technology Parks

Source: (1) InvestHK, (2) PitchBook
Note: * Private funding data for the Hong Kong startup ecosystem is sourced from PitchBook's database of completed private funding deals in Hong Kong. To ensure accuracy, the data was filtered by focusing on deals with an "actual and estimated" status only, and any M&A, LBO, or publicly listed companies were removed under the deal type. Specific categories, such as M&A PE Listed, and VC, were excluded under the universe column. However, specific IPO and LBO deals that were related to startups were added back in.

Hong Kong is uniquely positioned as IFC and 'Super Connector' to expand its status as FinTech hub into other sectors

Hong Kong is well-positioned as an international financial centre (IFC), with financial services playing a key role in the city's economy

4th
place in ranking of world's leading international financial centres[1]

21%
of GDP is contributed by the financial services sector[2]

Hong Kong's favourable geographical location and connectivity with other markets make it an ideal springboard for companies to expand into other markets such as the GBA and SEA

60%
of startups that has expanded outside of HK has entered SEA[3]

43%
of startups that has expanded outside of HK has entered the GBA[3]

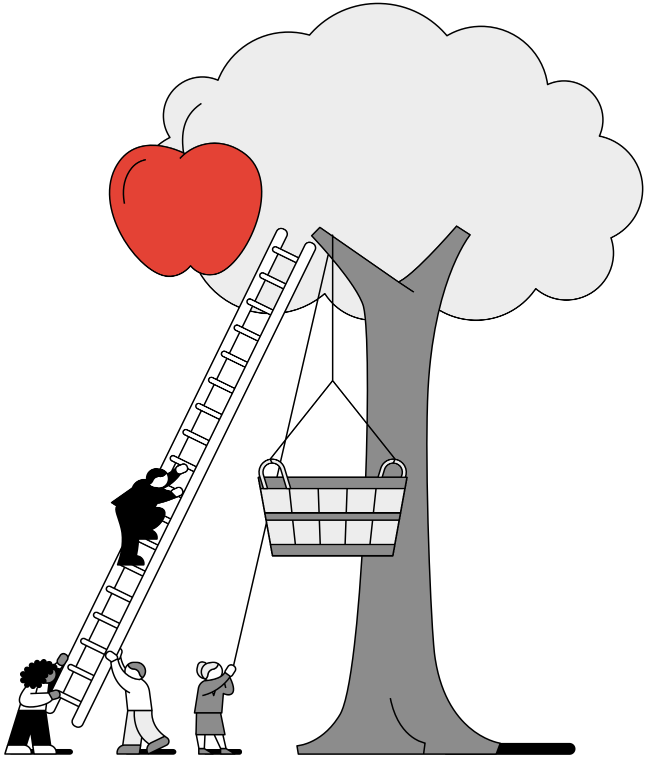
"Hong Kong has long been attractive to startups due to the easy access to the mainland and international markets, its simple tax system, access to funding and unique advantage as a global gateway to the ever-growing GBA.

Patrick Lau, Deputy Executive Director, Hong Kong Trade Development Council

Businesses have to look for business opportunities and Hong Kong is a good place for this from a freedom of information and business perspective."

Jeffrey Ren, Partner, OKX Ventures

Source: (1) Global Financial Centres Index, (2) HK Census data, (3) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: In which markets is your company currently operating in?
Base: n = 258 Hong Kong startup founders and executives



2.0 Hong Kong's Startup Ecosystem: Challenges and Opportunities

Against the backdrop of a thriving ecosystem and increasing demand for digitalisation, startups are encountering both internal and external challenges

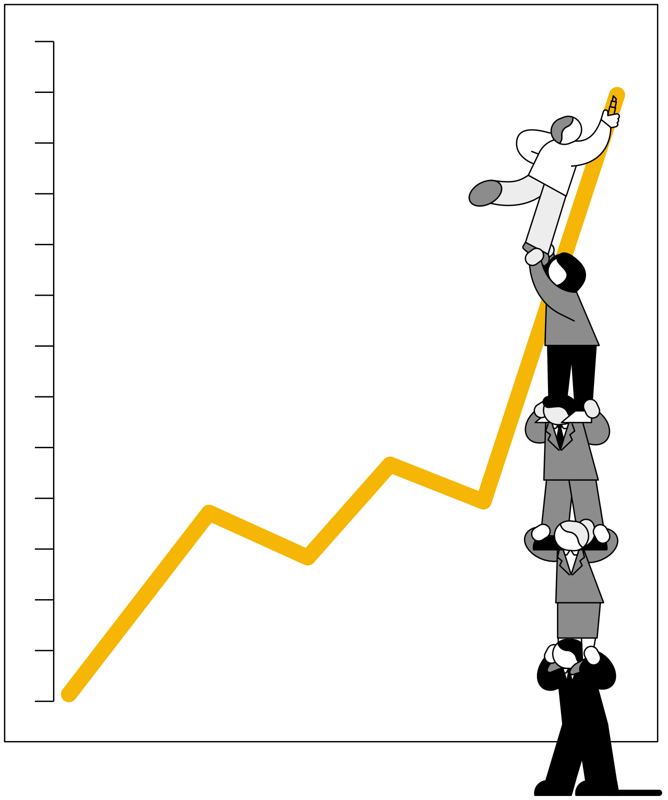
Access to funding and attracting talent remain the primary challenges of the startup ecosystem

Key observations

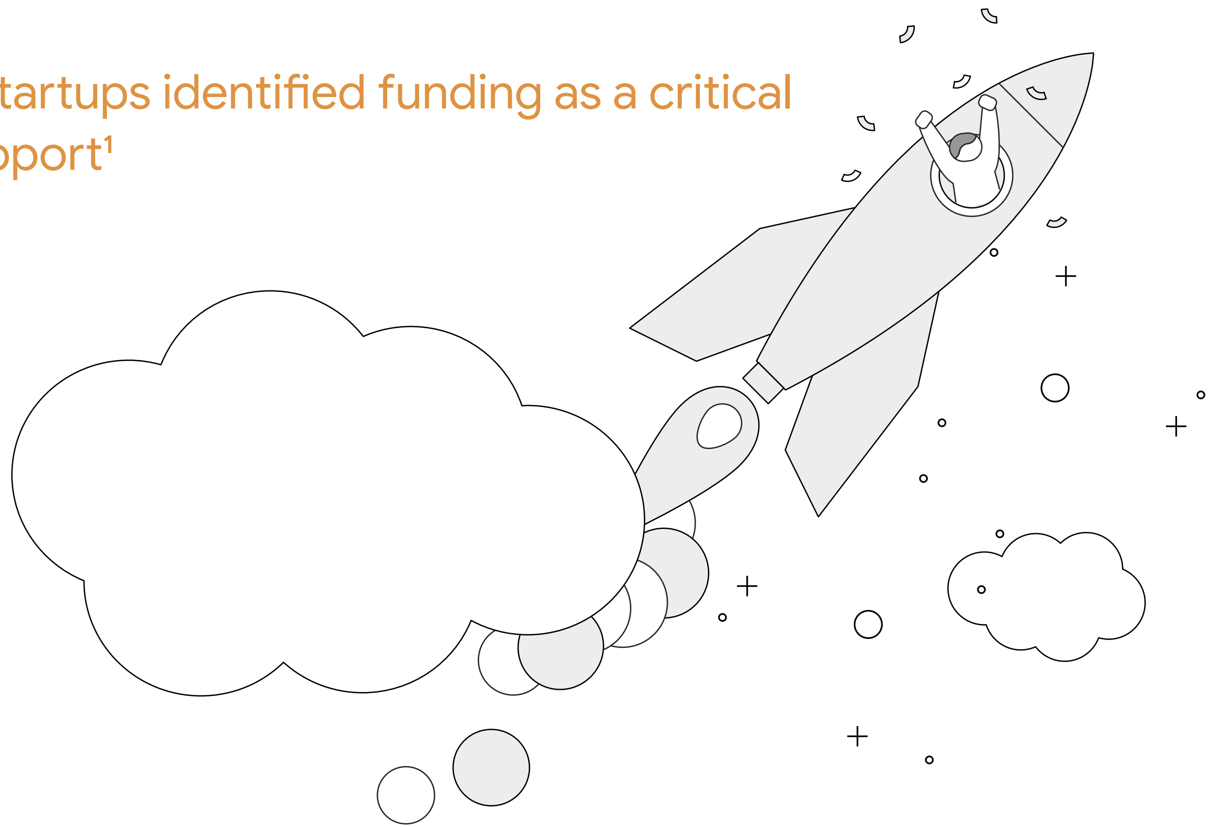
Overall	Customer expectations, operational efficiencies and financial regulatory requirements are driving digital transformation across various sectors and startups are leveraging emerging technologies such as AI/ML to meet increasing demand for digitalisation
Funding	While Hong Kong has a well-developed financial sector, bootstrapping remains the most common source of funding for startups, with 53% relying on their founders' own funds to get started[1]. Hong Kong also suffers from a lack of angel funding sources, compared to comparable startup ecosystems such as Singapore and Tokyo
Talent	Despite high wages and a shortage of local STEM talent, there is a growing number of students, graduates and young professionals willing to work in startups. In fact, over 70% of graduates have shown interest in working for startups, and they also exhibit a high willingness to reskill, especially for highly technical skillsets such as AI/ML, programming and cloud computing[2]
Digital adoption	Corporates and the public sector are increasingly open to collaborating with startups, as evidenced by the growing number of structured programmes designed to improve startup adoption rates. For instance, companies like CLP and DBS are hosting incubation programmes to vet startups and assigning digital partners to BUs to understand their pain points
Technology enablement	As AI/ML technologies continue to gain momentum, over 52% of startups are planning to invest in or adopt these technologies[1]. However, the high operating and setup costs, as well as the lack of talent, remain significant barriers for startups planning to do so
Growth	Emerging foreign markets, such as the Middle East, offer established funding sources, relaxed visa regulations and supportive ecosystems for growth. Despite this, these markets are often underpenetrated, with only 10% of startups having expanded into Europe and the Middle East[1]

Source 1: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: What type(s) of funding have you received, if any?/ Which of the following digital technologies/solutions are you planning to prioritise, further invest in and/or develop in the / In which markets is your company currently operating in? (Select all that apply)
Source 2: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem - Students/graduates/young professionals survey / Question: Have you ever considered joining a startup as an employee?
Base: n = 258 Hong Kong startup founders and executives / n = 250 students/graduates/young professionals below the age of 35

2.1 Funding



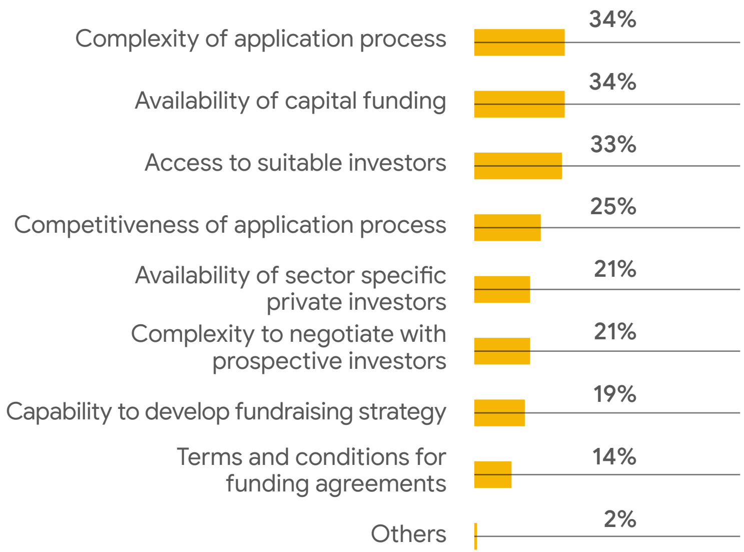
49% of startups identified funding as a critical area of support[1]



Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: In what areas does your startup require the most support?
Base: n = 258 Hong Kong startup founders and executives

Complexity of application process and capital funding availability are key challenges for startups getting private funding in Hong Kong

Challenges seeking private funding[1]
(% of startups)



The application process, availability of capital funding and access to suitable investors are seen as the top three challenges for startups in securing private funding across all sectors, including FinTech

Tighter liquidity in the market is limiting the availability of capital funding through private investments. Private VCs are in a 'wait and see mode' and have became more stringent when offering funding to startups, favouring startups that have a proven cash flow

The complexity of the application process is also a key challenge as startups are often required to provide a detailed track record, such as revenue proof and past credentials, during the due diligence process. The situation is even more difficult due to the increased risk-averse sentiments among investors, leading to greater scrutiny during the evaluation process

Access to suitable investors for startups depends on personal networks and sector. Traditional VCs may focus more on FinTech or logistics tech, making funding easier for these sectors. However, startups from niche markets may face difficulties in accessing funding as investors may be unfamiliar with their business model or technologies

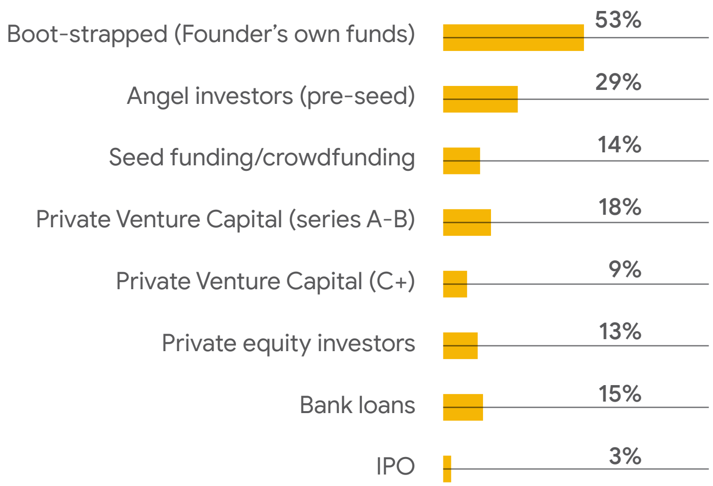
"People are in wait and see mode. There is US$ 140bn in the VC market waiting to be deployed."
David Chang, Partner, MindWorks Capital

"In the US, investors invest in teams or ideas. In Hong Kong they look at numbers – that you are generating revenue, have customers etc. So, the best way is to grow your business first and generate revenues before talking to investors."
Henson Tsai, Founder & CEO, SleekFlow

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: What are the key challenges your organisation has faced when seeking private funding?
Base: n = 258 Hong Kong startup founders and executives

Specifically, there is perceived to be insufficient funding & variety in Hong Kong, with over half of the startups are self-funded

Sources of funding in Hong Kong[1] (% of startups)



- While Hong Kong is capital intensive and has a well-developed financial sector, it lacks funding from investors, especially from angel investors. In 2020, early-stage and angel funding for Hong Kong's startup ecosystem reached only US$ 1.5bn, while Singapore's ecosystem raised nearly four times that amount, receiving US$ 5.6bn in early-stage funding[2]
- Bootstrapping is the most common source, with 53% of startups relying on their founders' own funds to get started, as often they do not have a business model and are not ready to commercialise to raise funds
- There are only 26 VC firms in Hong Kong[3], and they focus on investments in traditional sectors such as financial services, property development, logistics and manufacturing. Although there is a growing trend for investors to invest in DeepTech, including BioTech and sustainability-related technology, the overall lack of diversity of investors calls for more specialist investors that are willing to provide funding in different markets (e.g. hardware, automobiles etc.)

"We look for the usual factors: good team, good technology, good market. We also look for unusual factors: what is unusual about the team, the technology, and the way this product is servicing the market. Can it solve a currently unsolvable problem?"

Alan Au, Founder & Managing Partner, GT Healthcare Capital Partners

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem, (2) Startup Genome, (3) StartmeupHK
Question: What type(s) of funding have you received, if any?
Base: n = 258 Hong Kong startup founders and executives

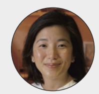
Family offices, venture debt and corporate ventures are emerging as new private funding sources, but this might not be benefitting early-stage startups

Family offices are emerging as a new funding source, with the support of government policies (e.g. the Capital Investment Entrant Scheme). However, late-stage startups might benefit more than the early-stage ones, as family offices are normally more conservative in their investments and less transparent. Identifying those willing to invest could be another challenge for startups

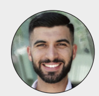
Venture debt has increased in prominence as an alternative funding source given the current business landscape. However, it might not be easy for early-stage startups to secure such funding as they may not be able to demonstrate a track record of consistent revenues. While venture debt helps early-stage startups avoid selling equity stakes at a too low valuation, they need to have a sustainable revenue stream for loans repayment

While more **corporates** are open to diversify their business with a new venture arm, they usually invest in startups that can offer synergies with their existing business. They also have stringent investment principles to evaluate the ROI, which might benefit late-stage startups more than early-stage

> “Family offices have a more traditional approach to investment because it is family wealth. It is very different from venture capital. So they would probably want to invest in later-stage or pre-IPO stage.
>
> Erica Ma, Managing Partner, CoCoon Ignite Ventures



> Venture debt would work for startups that are able to sign purchase orders. They know, sort of, when their income is coming in and they know they can pay for what they borrow. But if it is like a crypto or AI company, where it's all software based, you're not really paying an upfront cost.
>
> Erica Ma, Managing Partner, CoCoon Ignite Ventures

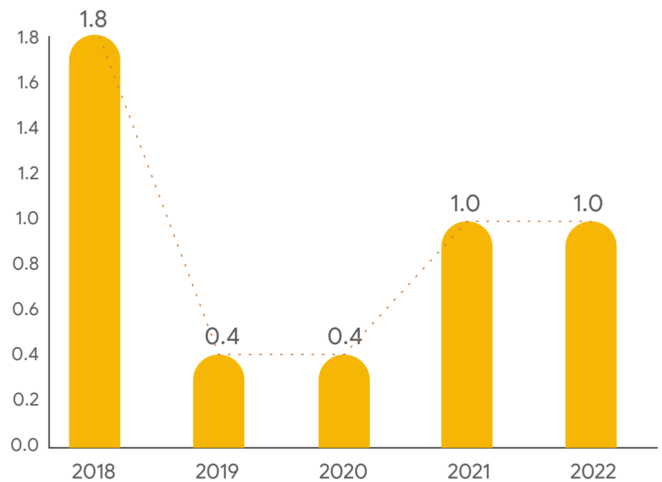


> Our collaborations with an array of startups have been pivotal in amplifying our operational efficiency. We strive to be the go-to institution for those exploring POCs and devising Minimum Viable Products (MVPs).”
>
> Medhy Souidi, Head of Transformation & Ecosystems, DBS

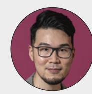
Note: 1. ITVF: Government venture capital, including the Innovation and Technology Venture Fund

Investors have become more cautious towards early-stage startups amid tougher business environment and rising interest rates

Private funding for early-stage startups in Hong Kong (US$ bn)[1]

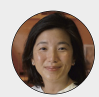


- Although funding in 2021 and 2022 exceeded that of 2019 and 2020, it has not reached the high of 2018
- Given the current tough business climate with high interest rates, the majority of investors are more cautious and favouring investments in later-stage startups, who have a proven business model with revenue. Early-stage startups might face greater funding challenges going forward. With 31% of early-stage startups indicating access to capital funding was their primary challenge[2], they might face greater funding challenges going forward



"Investors are more cautious, favouring later-stage startups with stronger credentials.

Gabriel Kung, Chief Commercial Officer, Bowtie



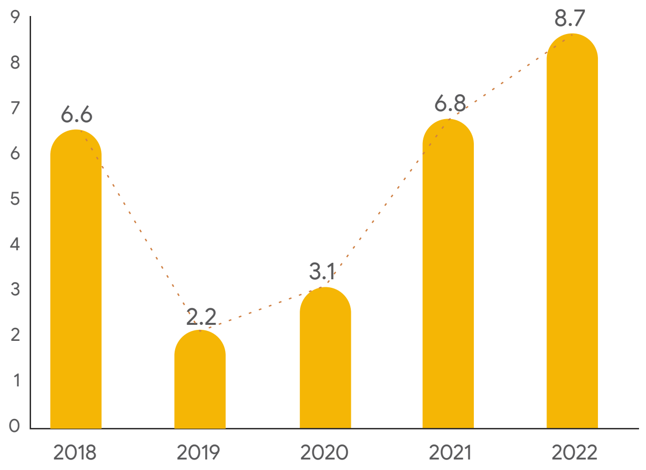
The majority of the programme is in late-stage funds, but I think co-investment could start in early-stage funding as well."

Erica Ma, Managing Partner, CoCoon Ignite Ventures

Source: (1) PitchBook, (2) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: What are the key challenges your organization has faced when seeking private funding?
Base: n = 258 Hong Kong startup founders and executives (n = 146 early stage startups, 112 growth stage startup)

However, late-stage private funding has recovered to pre-COVID levels as investors look to diversify their portfolio

Private funding for late-stage startups in Hong Kong (US$ bn)[1]



- Late stage VC's are looking to diversify their investing portfolio, specifically in sectors such as BioTech where companies have a proven track record
- The growth in late-stage funding is fueled by a surge in investment in the BioTech sector, with funding growing at a CAGR of 76% between 2020 and 2022 – and 446% from 2021 to 2022. This increase was largely driven by late-stage BioTech companies, such as Prenetics and ALiA Biotech, which secured significant amounts of private funding
- Although more early-stage startups are entering the BioTech sector, this trend has not translated into increased private funding for early-stage biotech startups, which received only 1.8% of total private funding. Most early-stage BioTech startups are still dependent on public funding

"Investment in biotech and healthcare companies is on the rise. Two decades ago there may have been a few that were invested in, now there are easily ten as investors look to capitalise on trends such as the ageing population and heightened awareness around wellbeing."

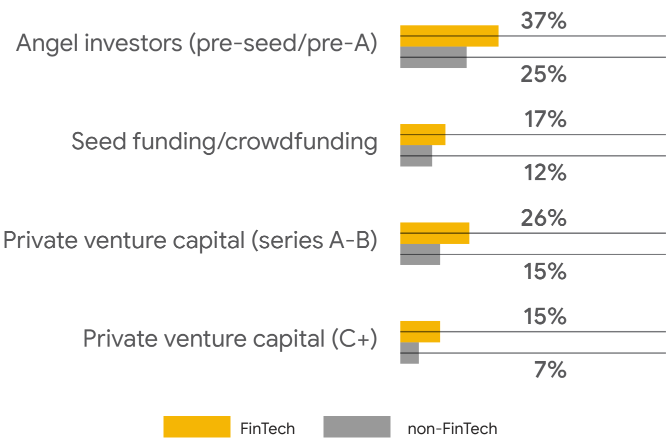
Alan Au, Founder & Managing Partner, GT Healthcare Capital Partners

Source:(1) PitchBook

Note: Private funding data for the Hong Kong startup ecosystem is sourced from PitchBook's database of completed private funding deals in Hong Kong. To ensure accuracy, the data was filtered by focusing on deals with an "actual and estimated" status only, and any M&A, LBO, or publicly listed companies were removed under the deal type. Specific categories, such as M&A PE Listed, and VC, were excluded under the universe column. However, specific IPO and LBO deals that were related to startups were added back in.

In terms of sector, it is traditionally easier for FinTechs to get private funding due to the mature financial services sector in Hong Kong

Source of funding for FinTech and non-FinTech[1] (% of startups)



Easier to raise funds in FinTech compared to other sectors

- Hong Kong has a mature and advanced financial services sector, investors are willing to invest because they know about the potential and opportunities in the sector
- In addition, Hong Kong has a well-regulated financial system with a supportive regulatory framework for FinTechs. Investors are more confident in making an investment in a proper compliance landscape
- Prompted by policies and initiatives such as the FinTech 2025 Strategy, there is a clear need for digital transformation in financial institutions, providing good sources of business opportunities to drive and sustain the growth of FinTechs

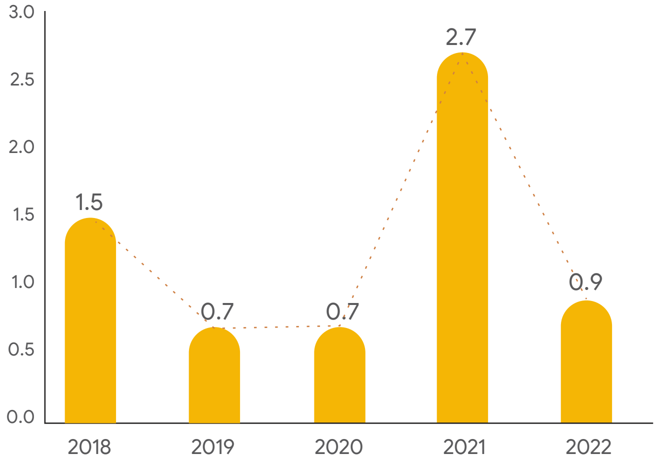
"FinTech and InsurTech startups may have an advantage in obtaining funding due to having a greater number of sophisticated investors interested in these areas. Other types of tech may be less well-known to investors, which could make it more challenging to secure funding within Hong Kong."

Gabriel Kung, Chief Commercial Officer, Bowtie

Source:(1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: What are the key challenges your organisation has faced when seeking private funding? / Question: What are the key challenges your organisation has faced when seeking public funding in Hong Kong?
Base: n = 258 Hong Kong startup founders and executives (n = 81 FinTechs, 177 Non-FinTech)

Nevertheless, FinTechs have encountered a plateau in obtaining private funds and are expected to face increasing headwinds

Private funding raised by FinTechs in Hong Kong (US$ bn)[1]



"Securing funding for startups can be challenging and often hinges on the founder's personal networks. The current landscape for startup financing doesn't always offer robust support."

Medhy Souidi, Head of Transformation & Ecosystems, DBS

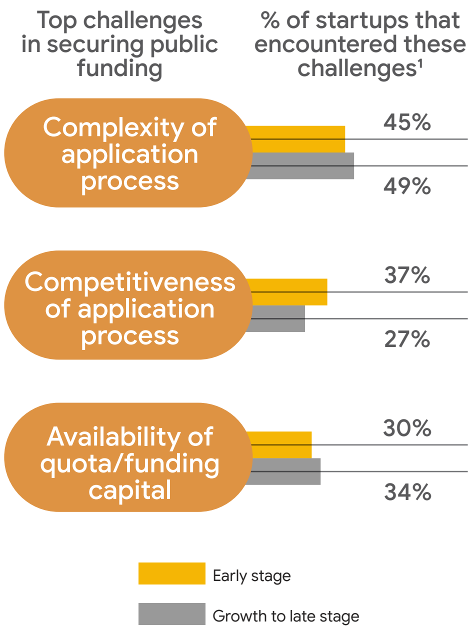
Increasing investor conservatism, especially in cryptocurrency, creates challenging fundraising environment

- In 2021, the startup industry observed a particularly large amount of funds raised for insurance companies such as One Degree. This increased the total funding amount by US$ 1.4bn, but it was seen as a one-off spike as the total funding normalised to US$ 0.8bn in 2022 – although a slightly higher level than in 2019 and 2020
- In general, the industry has observed a plateau in the amount of funds raised at around the US$ 0.8bn level. Startups may need to brace for more uncertainties in the global economic environment, while increased interest rates may also cause investors to be more conservative about investments in startups, especially in cryptocurrency, which had been one of the main drivers in investments in FinTech
- Private investors no longer treat acquisitions as KPI, but as revenue-generating factors when they invest in startups. FinTechs, especially those in cryptocurrency have been loss-making in recent years, which has made fundraising more challenging

Source:(1) PitchBook
Note: * Private funding data for the Hong Kong startup ecosystem is sourced from PitchBook's database of completed private funding deals in Hong Kong. To ensure accuracy, the data was filtered by focusing on deals with an "actual and estimated" status only, and any M&A, LBO, or publicly listed companies were removed under the deal type. Specific categories, such as M&A PE Listed, and VC, were excluded under the universe column. However, specific IPO and LBO deals that were related to startups were added back in.

Apart from private funding, securing public funding poses challenges – especially around the complexity of application process

37% of early stage startups have accessed public funding
vs 51% of growth to late stage startup[1]



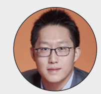
Startups across all stages deem the complexity of the application process to be the most challenging

- Public funding in Hong Kong usually are of a reimbursement nature and require multiple layers of proof for approval. Some of the procedures might also need to be digitalised further to speed up the approval or fund receipt process
- The long waiting times – for example TVP might take 9-12 months for approval – might reduce the effectiveness of a funding scheme, especially as early-stage startups are most in need of funding for survival
- From another perspective, both FinTech and non-FinTech companies face similar challenges with the long due diligence process required for private funding in Hong Kong. While the financial industry is highly regulated, other sectors may be less transparent and have lower visibility, contributing to the complexity and length of the application process

Growth to late-stage startups want to increase the extent of public funding, while early-stage struggles with the competition for funds

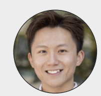
- Growth to late-stage startups consider the cheque size of public funding schemes to be lower than global best practices
- Early-stage startups might struggle to be competitive in the application process for public funding that are open to both startups and corporates

“It is good that [the government] are moving in the right direction. By drawing inspiration from successful models seen in California, Singapore and Israel, they could enable fund managers to manage a public funding pool for direct deals with startups to improve the processes and effectiveness of the funding schemes.”



David Chang, Partner, MindWork Capita

“Applications for government schemes are fairly complicated and it could take up to seven to eight months to get the funds.”



Henson Tsai, Founder & CEO, SleekFlow

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: What type(s) of funding have you received, if any?/ Question: What are the key challenges your organization has faced when seeking public funding in Hong Kong?
Base: n = 258 Hong Kong startup founders and executives (n = 146 early stage startups, 112 growth stage startups)

The public sector has a key role to play in improving the funding landscape

Recommendation: Expanding co-investment schemes for early-stage startups can potentially offset dampened investor sentiment

Investments in early-stage startups could increase from changes made to co-investment scheme

- Expanding the government's co-investment scheme[1] to cover early-stage startups and improving the co-investment criteria (e.g. offering favourable matching ratios for early-stage startups) could encourage Hong Kong VCs to invest in more early-stage startups
- The government could also consider increasing the funding ratio of the Innovation and Technology Venture Fund (ITVF). The current ratio of Hong Kong's co-investment scheme is 1: 2 (government : private) compare to the equivalent scheme in Singapore with a 7:3 (government : private) ratio[2]
- By elevating the government investment portion, it could potentially stimulate the appetite of the private sector to invest in startups at a relatively early stage of development

Source:(1) Innovation and Technology Fund Innovation and Technology Commission, (2) Startup SG

Recommendation: There are opportunities for further streamlining the approval process

Government funding is key for early-stage startups to survive

- The majority of challenges faced by startups are on the application, approval and reimbursement processes. Streamlining these processes, including through a coordination unit, could lead to further uptake of public funding.
- With the many funding schemes, there are opportunities to leverage technologies to help individual startups identify the most funding schemes, which could further enhance uptake of public funding. Smart solutions could be considered for the reimbursement processes

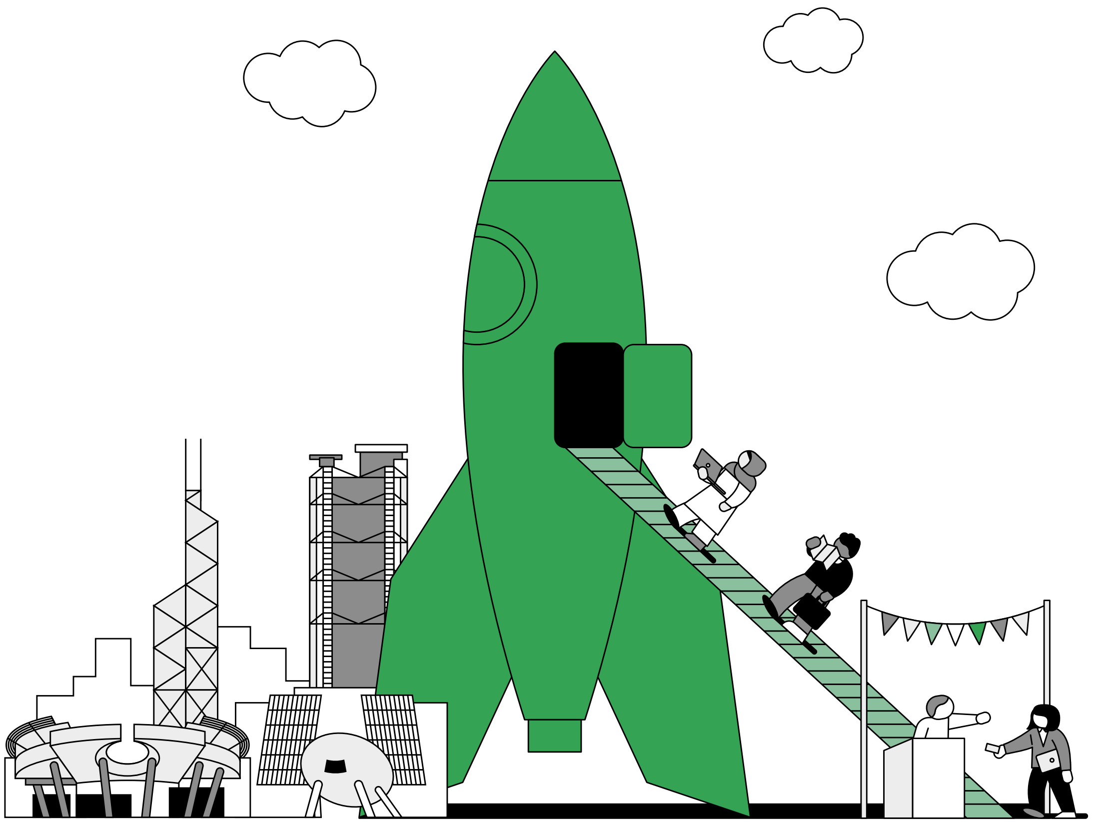
Recommendation: FinTechs should pivot to address changing regulatory needs and keep an eye on overseas markets

FinTechs to capture opportunities presented in regulatory space

- Going forward, FinTechs outside of Regtech should plan for a tougher funding environment and pivot in response to regulatory changes. Nonetheless, with the launch of CDI, financial institutions could embrace more innovative applications to digitalise and streamline a wide range of financial processes, which would present opportunities for FinTechs to capture new sources of revenue and funding
- FinTechs should also look beyond the Hong Kong market and tap into markets such as the US, UK and Singapore
- Early-stage startups should join incubation programmes and expand their network to engage key decision makers for trials, which would serve as good credentials to get future clients and funding, test market demand and business models, as well as improve the solution offering in solving business needs

“Going forward, FinTech is a tough market and is facing a lot of regulatory oversight. Hong Kong has RegTech players that are emerging and are at an early stage, which because of the heavier regulation, might be one area to look at.”

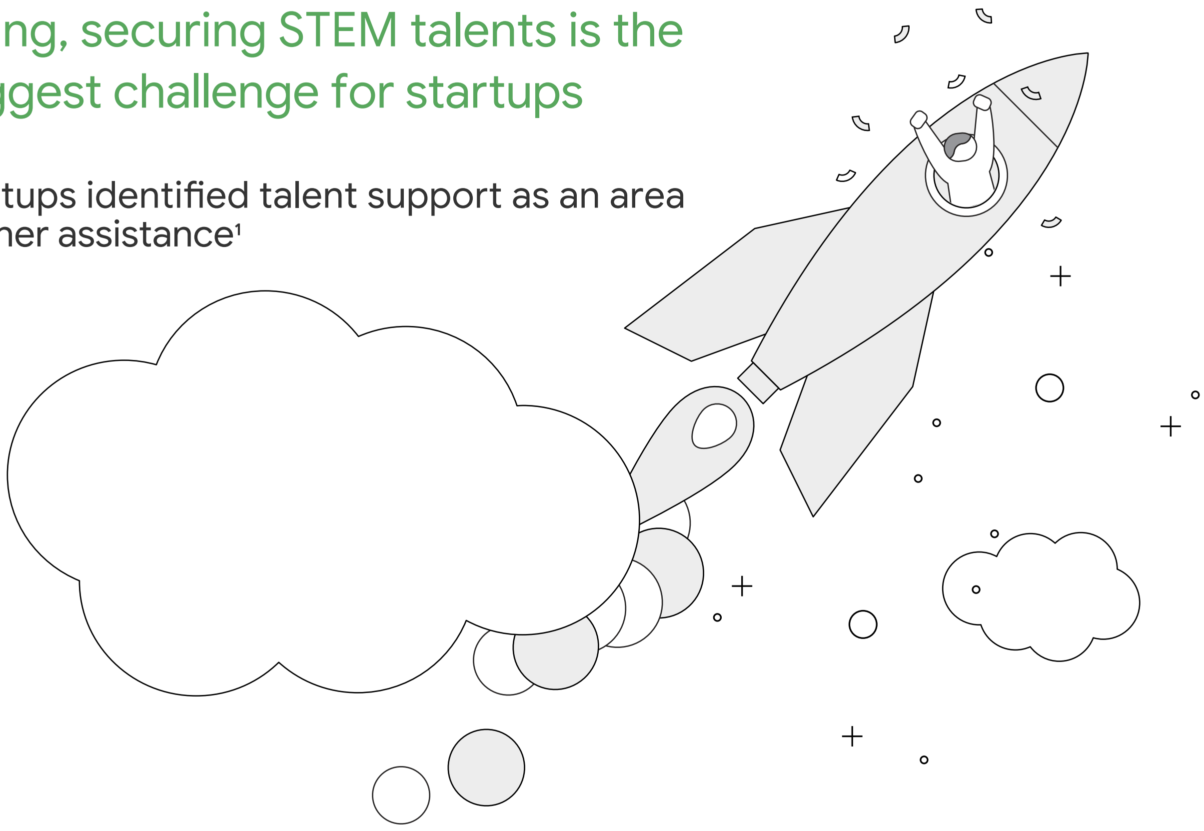
Hing Cheng, Executive Director of Corporate Development, Gobi Partners Greater Bay Area



2.2 Talent

After funding, securing STEM talents is the second biggest challenge for startups

34% of startups identified talent support as an area requiring further assistance[1]



Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: In what areas does your startup require the most support?
Base: n = 258 Hong Kong startup founders and executives

Shortage of local and foreign STEM talent pool remains a bottleneck for growth

Top challenges for startups in talent acquisition[1]	% of startups that encountered these challenges[1]	Overview
High wages for local talent	57%	Hong Kong has one the highest wage levels in Asia, particularly for STEM talent, which can be a challenge for startups facing cashflow constraints. As a result, many startups have turned to outsourcing their R&D activities, such as programming, to lower cost markets like Malaysia and India
Shortage of local talent pool	50%	The departure of STEM talent has led to a shortage of highly-experienced STEM talents, who would like to explore better job opportunities with more variety in overseas markets. There is also a lack of STEM job opportunities in technology corporations, which often only offer sales and marketing roles in Hong Kong
Difficulty in attracting foreign talent	35%	While it is a welcome step that the government has recently introduced several policies to attract foreign talents such as the TechTAS programme, most startups have yet to benefit from schemes that target at higher-earning individuals or meet the specific requirements of the schemes
Requirements to participate in government schemes are too high	29%	Applying for government schemes might take a long time to go through the application, vetting and approval procedures. In addition, applicants are required to provide extensive proof and evidence to qualify for these subsidies

“Hong Kong universities do not produce enough tech talent to meet demand. Talent migration has worsened the market situation.”

Allen Yeung, Founder and CEO, Intelli Global Corporation Limited

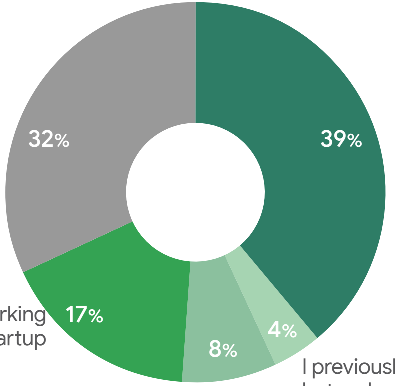
“The government requires you to prove why foreign talents are better than local talents, but it is difficult. Just because sometimes local talents might not want to join a startup.”

Henson Tsai, Founder & CEO, SleekFlow

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: What are the main challenges in sourcing relevant talent for your business?
Base: n = 258 Hong Kong startup founders and executives

Nevertheless, the industry is seeing an increase in supply as it is becoming more culturally acceptable and encouraged to work for startups in Hong Kong

~70% of surveyed students/graduates/young professionals have worked, considered joining or are working in a startup[1]



"Hong Kong's entrepreneurial spirit is developing, and high school/university students are now more receptive to a career in a startup.

Charleston Sin, Executive Director, MIT HK Innovation Node

Entrepreneurship in the technology industry has become widely accepted in recent years. More people are willing to start their own tech business instead of working for enterprises. Entrepreneurs are also highly looked upon by society.

Peter Yan, CEO, Cyberport

Some NGOs promote the development of entrepreneurship among young people and support them to start their own business."

Chua Hoi Wai, Chief Executive, The Hong Kong Council of Social Service

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem - Students/graduates/young professionals survey / Question: Have you ever considered joining a startup as an employee?
Base: n = 250 students/graduates/young professionals below the age of 35

Local talents show a high willingness to reskill; AI/ML reskilling programmes are in high demand

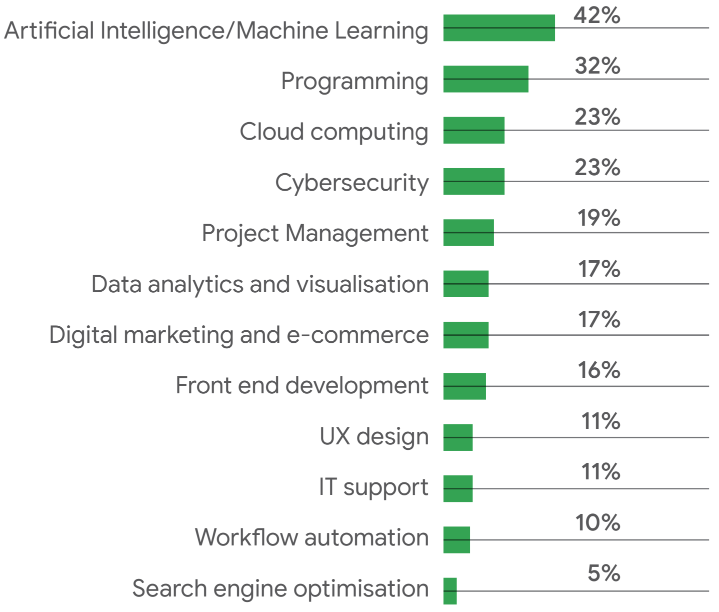
51%

of startup founders believe that reskilling/upskilling can help grow the local talent pool[1]

80%

of students/graduates/young professionals consider upskilling and continuous education programmes as key methods to improve their market competitiveness[1]

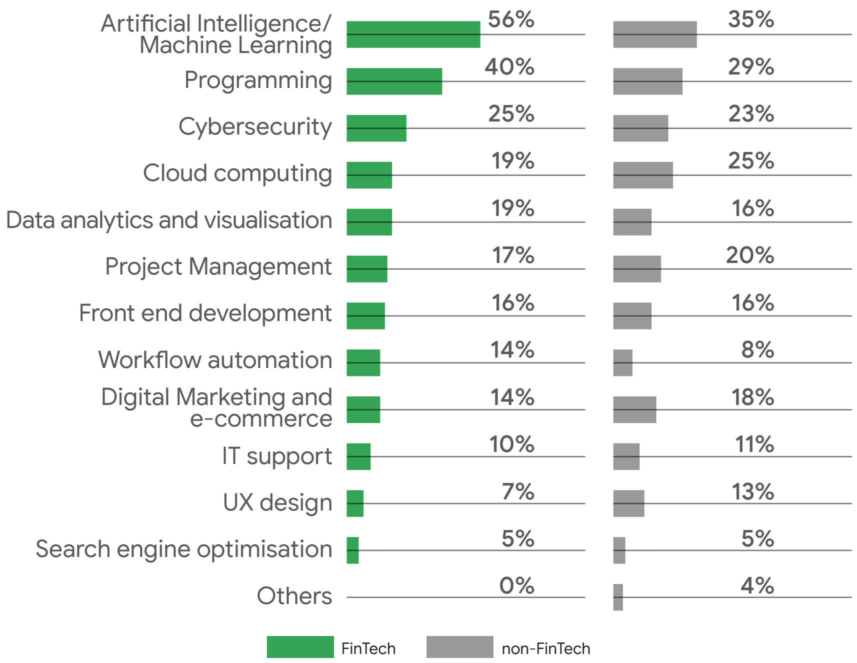
Most in-demand skillsets by startups
(Respondents could select all that apply)[2]



Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: What are the most important technical skillsets you typically look for when hiring for your startup? / Question: I believe reskilling and upskilling can help to grow the local talent pool.
(2) Students/graduates/young professionals survey / Question What are some initiatives you have taken to learn a new technical skillset or improve your competitiveness in the job market or your marketability to your current employer? [80% is sum of students selecting HK Government-provided upskilling programmes, offline continuous education and online continuous education programme]
Base: (1) n = 250 students/graduates/young professionals below the age of 35, (2) n = 258 Hong Kong startup founders and executives

Demand for AI/ML and programming skillsets higher among FinTechs compared to other sectors

Most in-demand skillsets, FinTechs vs non-FinTech sectors[1]
(% of startups)

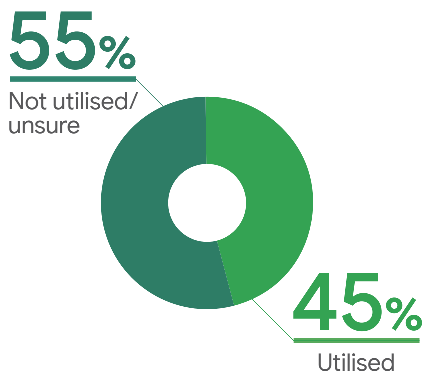


- AI/ML are highly regarded technologies used to develop predictive models, to effectively process and **analyse large amounts of financial transaction data and conduct risk analysis**
- AI/ML also frequently used to generate **automated reports and audit trials.** With financial sectors needing to adhere to more stringent compliance reporting, AI/ML is seen as a tool to create a more transparent record for regulatory audits
- AI/ML are also employed to simulate and **test compliance scenarios within the regulatory sandbox.** This helps FinTechs proactively address compliance challenges and ensure adherence to regulatory requirements before deploying new services

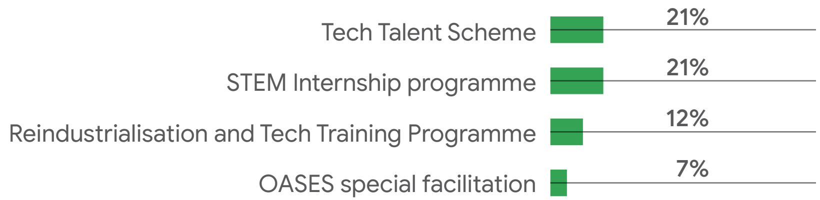
Source:(1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: What are the most important technical skillsets you typically look for when hiring for your startup?
Base: n = 258 Hong Kong startup founders and executives (n = 81 FinTechs, 177 Non-FinTech)

Startups are underutilising government talent schemes to help reduce the talent gaps

Less than half of startups has utilised government talent schemes



Among startups who have utilised a government talent scheme, the Technology Talent Scheme is the most widely used (Respondents could select all that apply)



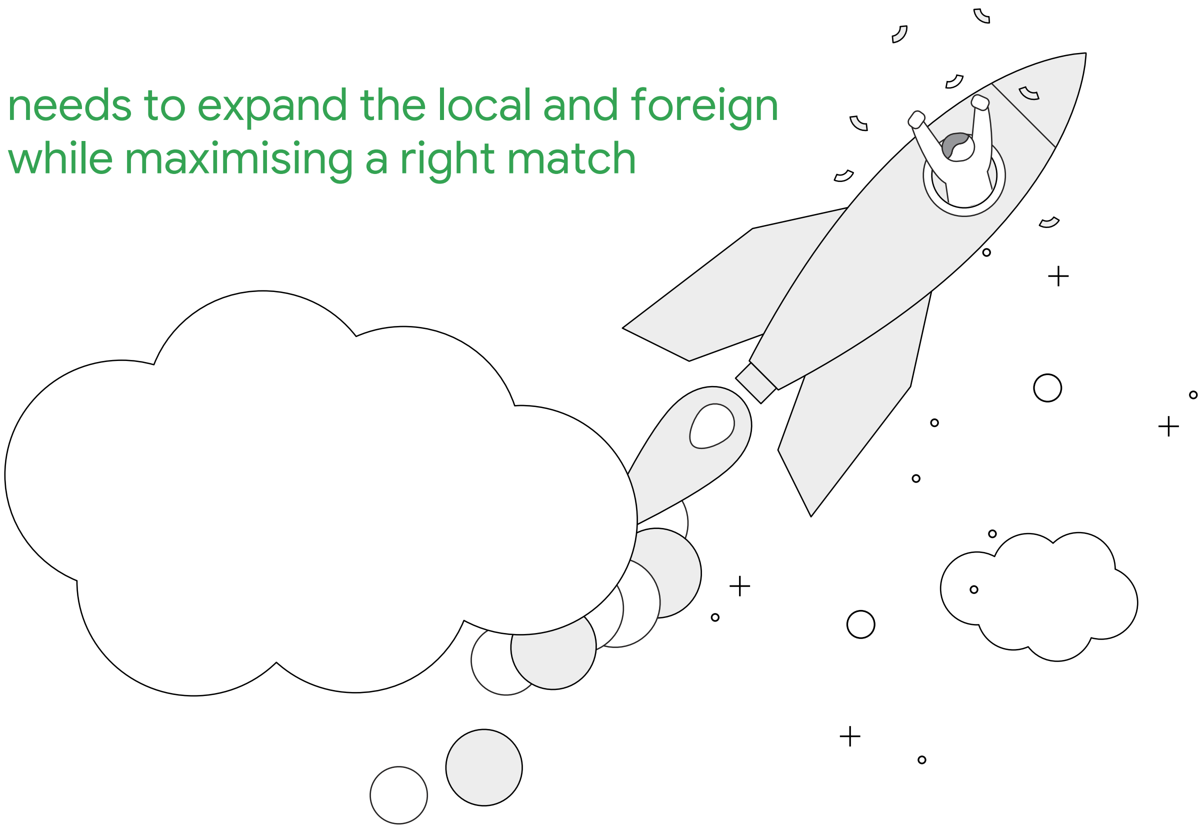
- Both the Technology Talent Admission Scheme (TechTAS) and STEM Internship programme are the most widely used government talent schemes (both at 21%)
- Startups view the lengthy and complicated process of obtaining a foreign visa as a key challenge when attracting foreign talent. As the Tech Talent Scheme provides a fast track visa application process for overseas and Mainland technology talent, startups regard this programme as support to expedite this process
- TechTAS requires that talents should have an annual remuneration of not lower than HK$ 2.85m. This can be a challenge especially for early-stage startups with limited resources
- Developing a similar fast track scheme, but with more lenient requirements, will be crucial in helping startups attract more foreign talent

“The new talent scheme is good because it enables us to hire talent from Europe and Singapore quickly.”

Henson Tsai, Founder & CEO, SleekFlow

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: Has your company benefited from any of the following government funded talent schemes
Base: n = 258 Hong Kong startup founders and executives

Hong Kong needs to expand the local and foreign talent pool, while maximising a right match



Recommendation: Encouraging corporates to establish technical teams can attract local and foreign talents

Case study: Strong government support with suitable infrastructure and talent pool led Uber to establish its engineering centre in Canada

- The Canadian government has implemented several policies and initiatives to support innovation and entrepreneurship
- These include the Scientific Research and Experimental Development (SR&ED) tax credit, which provides tax credits or refunds to companies that conduct R&D in Canada
- In addition, the Canadian government has implemented a Startup Visa Program[1], which is designed to attract foreign entrepreneurs and startup founders to Canada. The initiative provides a path to permanent residency for entrepreneurs who have the support of a designated Canadian investor or accelerator
- Due to the favourable innovation and entrepreneurship environment, the Canadian government has attracted Uber to establish its engineering center in Toronto
- Uber announced that it would be investing approximately US$ 158m to open its first engineering hub outside of the United States
- Uber has since continued to invest in the city and expand its operations in Canada. In 2020, the company announced that it would be investing an additional US$ 158m over the next five years to expand its operations in the country, including the development of new technologies and the creation of new jobs

The public sector could continue to encourage enterprises to establish technical teams in Hong Kong to strategically attract foreign talents

- Continue providing an enabling environment with supportive policies/measures to attract multinational companies to not only set up a sales and marketing office in Hong Kong, but also technical teams
- Offer subsidies and programmes to corporates to lower their cost of hiring local STEM talents for R&D activities, enhancing Hong Kong's cost competitiveness against other markets
- Encourage corporates to establish technical teams focusing on specific areas that Hong Kong is heavily invested in such as blockchain/Web3

“Hong Kong needs to attract foreign companies to setup APAC innovation centres and hubs in Hong Kong as these MNCs will attract foreign STEM talents and help develop local talents who will eventually move to other local or smaller companies.”

Francis Fong, Honorary President, Hong Kong Information Technology Federation

“A few years go, some startups faced challenges in obtaining working visas for their talent. However, it seems that the situation may have improved, as we have observed an increase in the proportion of non-local staff.”

Gabriel Kung, Chief Commercial Officer, Bowtie

Source: (1) Canadian Start-up Visa Programme: https://www.canada.ca/en/immigration-refugees-citizenship/services/immigrate-canada/start-visa.html

Recommendation: Job skill intermediaries can help bridge talent gaps in AI/ML (1/2)

Case study: Singapore offers job training to young professionals through multiple programmes, including the AI Apprenticeship Programme[2]

- The programme is supported by the Infocomm Media Development Authority (IMDA) and provides funding to cover the salaries and training costs of young professionals
- Startups are matched with young professionals who have completed relevant AI/ML courses and are keen to gain on-the-job experience
- The apprentices receive mentorship and guidance from experienced AI/ML professionals, startups, universities, as well as training in areas such as data analytics, ML algorithms and programming languages

Reskilling and upskilling can be a key avenue to develop the skillset most demanded by startups[1]

- **Policymakers** could develop 'job-skills intermediaries' to establish partnerships with professionals, universities and the Vocational Training Council and work with industry, training and employment facilitation partners to identify skill gaps and develop training programmes, as well as offer job placements and on the job experience
  - **Policymakers** could also engage AI/ML professionals to provide coaching, guidance and mentorship to young professionals as they work to develop their skills
  - **Policymakers** could also provide subsidies to incentivise companies to participate and support the development of skilled talent
- **Private sector** could collaborate with these job skills intermediaries to offer job placements and other on the job experience to professionals within these programmes to improve the overall competitiveness of talent. Corporates will also be able to identify suitable talents from those participating in these schemes
- **Startups** could proactively seek opportunities from job skills intermediaries and encourage their employees to participate in these programmes to upskill themselves. This can help resolve the key pain point of the shortage of STEM talent in the market

“Corporates want to have upskilling partners to help uplift existing employees. Academic institutions also value the practical aspect of our programmes. Through our partnership with HKU we upskill students regardless of background and connect them with jobs in the digital side of things-internships or full time job.”

Terrence Lok, Co-Founder & CEO, TalentLabs

“In terms of the skills shortage, it is evident in the fields of computer science, AI and big data. When we talk to SMEs, these are the talents everyone is looking for.”

Edmond Lai, Chief Digital Officer, Hong Kong Productivity Council

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: Which of the following digital technologies/solutions are you planning to prioritise, further invest in and/or develop in the coming three years?, Source: (2) Singapore IMDA
Base: n = 258 Hong Kong startup founders and executives

Recommendation: Reskilling programmes focused on AI/ML are particularly needed to address skills shortage in the FS sector (2/2)

Similar to other sectors, adopting 'job skill intermediaries' and reskilling programmes are crucial in bridging the skillset gap in the FinTech sector

- FinTechs should leverage reskilling programmes to upskill their existing talent pool. As the financial services industry is known to offer higher pay for talent, it can be challenging for FinTech companies to attract and retain skilled professionals
- Reskilling programmes could be important to bridge this skillset gap for the financial services sector, especially for AI/ML and programming skillsets, which are in high-demand at FinTechs
- In addition to offering reskilling programmes for technical skillsets, job skill intermediaries must offer training for both the application of AI/ML technology in day-to-day work and product management skills, as these are highly relevant in the financial services sector given the mature adoption of AI/ML technology in their operations

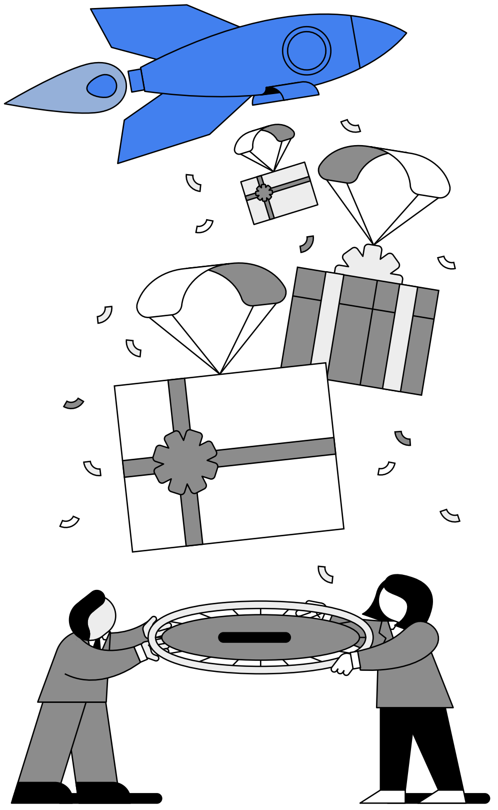
"Another skillset required by startups on top of the technical skillsets is product management capability – the ability to bridge the gap between the technical solution/know-how and the business/market needs."

Albert Wong, CEO, Hong Kong Science & Technology Parks

"A lot of FinTech companies and finance companies said they are facing a shortage of multi-skilled talent that knows the industry and knows the technology."

Edmond Lai, Chief Digital Officer, Hong Kong Productivity Council

2.3 Digital adoption



Pilot testing is a key area to support the growth of startups. While corporates and the public sector are receptive to collaboration, identifying and securing opportunities remain challenging

Both the corporate and public sector are becoming more receptive and willing to collaborate with startups

48% of startups have collaborated with corporates. As corporates are increasingly interested in working with startups on more innovative solutions, the level of collaboration is expected to grow[1]

"There are more corporate innovation managers and chief innovation officers being hired to focus on how to bring innovation in house and have innovative companies interface with different BU.

Jayne Chan, Head of StartmeupHK, InvestHK

We are learning how these technologies can help with operational efficiency or hiring, etc"

Vanessa Cheung, Group M.D., Nan Fung Development Ltd

26% of startups have collaborated with the government. As the public sector introduces more supportive policies, further collaboration can be expected[1]

- Introduction of programmes such as the PSTS, e-Procurement and SmartLab are expected to drive collaboration between the public sector and startups
- Incubators are increasingly showcasing solutions to government departments to help resolve their pain points

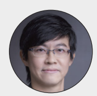
"Government departments and the public sector have been very active in recent years in seeking collaboration opportunities with startups."

Albert Wong, CEO, Hong Kong Science & Technology Parks

Startups must focus on differentiating their technology and build stronger credentials

Startups should collaborate with incubators or corporates to leverage their credibility and relationships

"Corporates prefer to partner with startups that utilise technology as a key differentiator to build scalable business models rather than startups that apply technology in a supplementary role."



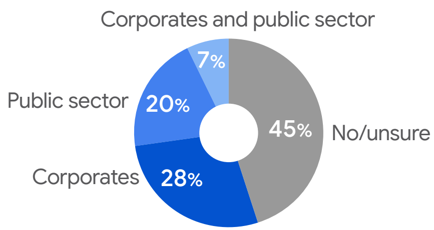
Chung Ng,
Senior Vice President,
PCCW and HKT Group

"Startups could partner with corporates or businesses from large enterprises as a co-bid for government business that they would otherwise not be in a position to bid for."

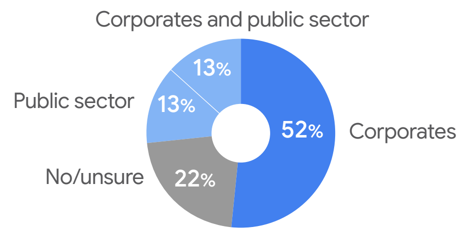
Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: Has your startup collaborated, either previously or currently, with corporates or the public sector in Hong Kong to develop/deliver technology solutions?
Base: n = 258 Hong Kong startup founders and executives

Corporates are more willing to collaborate with early-stage startups than the public sector, though more adoption should be encouraged

~45% Early-stage startups that have not worked with corporate or public sector clients



~22% Growth-stage startups that have not worked with corporate or public sector clients



- Almost half of early-stage startups have not worked with corporates or public sector clients; they usually have weaker credentials and their solutions might be still in the prototype stage and not ready to support clients at a larger scale
- The public sector in general is considered to be more conservative, as it has more requirements to fulfil in terms of the usage of public funds

- Just over three-quarters (78%) of growth-stage startups have worked with corporates and/or public sector clients. Of these, 65% have worked with corporates vs 26% with the public sector
- As growth-stage startups generally have more mature prototypes or solutions with a proven track record, both the public sector and corporates are more open to collaboration

“Large companies often prioritise partnering with trustworthy and established providers. This can make it challenging for startups to compete and win business, even if their solutions are excellent and cost-effective.”

Gabriel Kung, Chief Commercial Officer, Bowtie

Source:(1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: Has your startup collaborated, either previously or currently, with corporates or the public sector in Hong Kong to develop/deliver technology solutions?
Base: n = 258 Hong Kong startup founders and executives

Startups lack the right platform to showcase their strengths when pursuing partnerships with corporates

Challenges startups encountered when collaborating with corporates
(% of respondents that encountered these challenges)

33% of startups consider tough competition from other businesses as a primary challenge when establishing a collaboration with corporates

33% of startups consider the lack of an outreach channel to the right stakeholders the key challenge when collaborating with corporates

32% of startups consider that they lack sufficient brand awareness/reputation/credentials to be considered by corporates

- Startups find it challenging to develop the initial relationship with a corporate, especially those with limited business connections and networks
- Startups, in particular those with a management team that is heavily focused on technology, invest most of their time in product/technology development, and might neglect the commercial side such as the development of a business model and client relationship building. They also lack the network and channels to engage with key decision makers at corporate clients
- As the startup industry in Hong Kong is getting more competitive, it might be difficult for startups to differentiate themselves against other startup players with a similar solution
- Aside from competition from their peers, startups also face pressure to prove their capabilities when only having limited use cases compared with other established players with a strong track record and credentials

“Startups say it is very hard to sell to a corporate. They don’t understand the various departments in corporates and how they work, and finding the right person to talk to can be a difficult process.”
Jayne Chan, Head of StartmeupHK, InvestHK

Source:(1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: Has your startup collaborated, either previously or currently, with corporates or the public sector in Hong Kong to develop/deliver technology solutions?
Base: n = 258 Hong Kong startup founders and executives

To facilitate more effective collaboration, corporates can consider setting up an innovation team and loosen their restrictions on working with startups

Sourcing startup solutions through open innovation is an effective way to address pain points of BUs

Overview

CLP 中電

About the programme	To complement the development of solutions within the BUs, CLP also looks outside of the organisation for innovation. In addition to being active with the research community and venture capital, CLP's strategy also includes a global accelerator programme, called Free Electrons, and a tech scouting programme, called Phoenix, to source, vet, and pilot technologies of startups that help resolve specific pain points
Focus area	Focus on developing new products and solutions, and achieving operational excellenc
Startup collaboration mode	Startup trial collaboration programme
Collaboration maturity state	Mature model with over 30 pilots conducted

Matching/collaboration mode and challenges encountered

Matching process

CLP employs top-down and bottom-up approaches to collaborate with startups. The Free Electrons accelerator programme is a top-down approach that source 500-1000 startups each year, from which we choose the ones that fit best, while the Phoenix programme is a bottom-up approach, scouting for startups based on specific pain points identified BUs

Challenges

- A startup is not ready for pilot, a solution may not be novel, or a startup may have a technology rather than a solution
- Executional challenges (e.g. integration issues)

Collaboration process

After a BU is matched with a startup and there is strong interest, they will run a pilot programme to assess the benefits. If CLP and the startup see value, they could continue to collaborate; it can potentially be brought on as a vendor or even provide a white label solution

Key takeaways

- CLP's approach facilitates the comprehensive adoption of startup solutions through bottom-up and top-down approaches
- CLP's business partnering approach ensures pain points of BUs are understood and delivery of trials with startups

"As an organisation we need to stay on top of latest technological trends. Through piloting technologies we achieve this, while building capacity and addressing pain points at the same time. There is a lot to be learned in the process."

Brendon Joe,
Head of Group Ventures & Research, CLP

Google

Quick onboarding with financial support allows startups to innovate and experiment without limitation

Overview

DBS

About the programme	Initiated the Startup Exchange Programme to facilitate the bank's collaborations with startups
Focus area	Focus on customer experience and operational improvement
Startup collaboration mode	Vendor and co-creation mode
Collaboration maturity state	Mature - Conducted around 65 Proof of Concepts of which 20+ have been deployed into production. Ecosystems-based Partnerships with startups based on Digital onboarding, Platform-Based merchant and consumer financing solutions, Algorithm-based lending & Payment/banking as a service (open API)

Matching/collaboration mode and challenges encountered

Collaboration process

DBS identifies issues in the bank through problem statements and calls for potential startups with the right solutions. Once DBS has shortlisted appropriate startups, they will conduct an interview to make sure both parties fit. All deliverables by the startups are detailed in the contract

Challenges

- The solutions proposed by the startup do not address DBS's current challenges
- The solutions suggested by the startup don't enhance DBS's current internal processes or technology, nor do they elevate the bank's service or user experience
- The use case development cost outweighs its limited impact or improvement

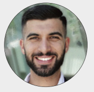
Support given to startups

- Financial support: DBS pays startups even during the experimental stage (or co-creation) to support the operational costs of startups and further encourage innovation without any financial constraints
- Quick onboarding process: takes an average two weeks to onboard a startup

Key takeaways

- Openness towards experimentation allows DBS to quickly refine a solution until it can be effectively integrated into the bank's operations
- Systematic updates to a central document with all problem statements to enable easy and more accurate matchmaking

"Our collaboration with numerous startups is instrumental in enhancing our company's efficiency. While we're making strides in enhancing employee engagement, it's noteworthy that most of our current use cases are directly generating value."

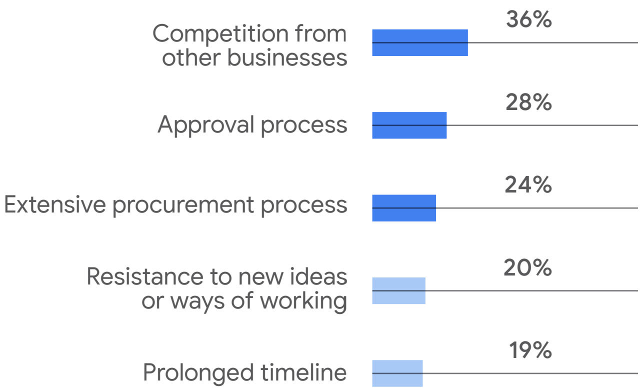


Medhy Souidi,
Head of Transformation & Ecosystems, DBS

There are opportunities for the public sector to further collaborate with startups

The extensive procurement and approval process pose challenges for startups seeking to collaborate with the public sector

Challenges startups encountered when collaborating with the public sector[1]
(% of respondents that encountered these challenges)



- Established companies with proven track records and greater technical expertise tend to be better equipped to meet government requirements and are typically more competitive in winning government bids
- The introduction of the pro-innovation procurement policy in 2018 has reduced the emphasis on the tenderer's experience as a mandatory requirement for procurement. However, it is worth noting that the 'past reference use case' with the HKSAR Government remains the first question in the procurement application process
- While the policy change has introduced an innovation angle to the procurement weighting, it is only included as an aspect under technical weighting. Furthermore, the reduction in pricing weighting has removed one of the key competitive edges for startups
- While SmartLab provides an online platform for matching public sector needs with startup solutions, and e-Procurement offers a digital platform for applying for procurement, the process still requires completion of separate offline forms for the submission of supplementary information, such as financial statements, detailed CVs, credentials and quotations

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: What were the key challenges your startup faced when collaborating and/or seeking to collaborate with the public sector in Hong Kong?
Base: n = 258 Hong Kong startup founders and executives

FinTechs face similar challenges when working with either corporates or public sector clients

FinTechs need to address compliance and security concerns when working with both corporates and public sector clients

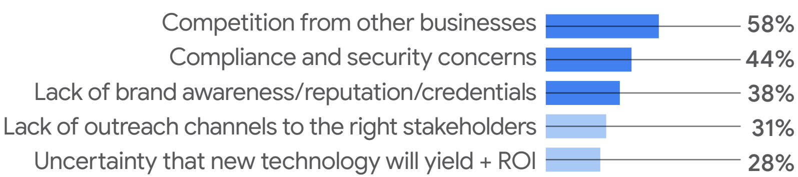
~58% of FinTechs have partnered with corporates and/or with both corporates and the public sector compared to 44% with other sectors

- The pandemic, the HKMA's 'all banks go FinTech' initiative and other efforts have boosted the adoption of FinTech by financial institutions, especially in RegTech, PaymentTech and LendingTech[2]
- With over 600 startups and a significant number of third-party vendors, FinTech is a competitive sector, making it challenging for companies to stand out among larger corporates
- As corporates are in possession of a huge amount of customer and financial data, they require FinTechs to adhere to more complex compliance regulations and take robust security measures

~18% of FinTechs have partnered with the public sector and/or with both corporates and the public sector

- While FinTechs have a higher success rate collaborating with corporates, there is a comparatively low level of collaboration with the public sector
- FinTechs face similar challenges as startups in other sectors, highlighting the cumbersome and complicated procurement and approval process as the key challenges

Challenges FinTechs encountered when collaborating with corporates (% of respondents that encountered these challenges)



Challenges FinTechs encountered when collaborating with the public sector (% of respondents that encountered these challenges)

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem, (2) HKMA Tech Baseline Assessment
Question: Has your startup collaborated, either previously or currently, with corporates or the public sector in Hong Kong to develop/deliver technology solutions? / What are the key challenges your startup has faced when collaborating with and/or seeking to collaborate with corporates? / What were the key challenges your startup faced when collaborating and/or seeking to collaborate with the public sector in Hong Kong?
Base: n = 81 FinTech startup founders and executives / n = 258 total respondents

Sandbox encourages more FinTech adoption, but its effectiveness can be further improved from the perspective of startups

39%

of FinTechs consider Hong Kong to be a good pilot testing ground for products and services[1]

18%

of FinTechs consider the current sandbox and talent support to be successful enablers[1]

Sandbox is launched to facilitate FinTech adoption

- To ensure that FinTechs have a safe place for testing solutions, the Hong Kong Monetary Authority (HKMA), the Securities and Futures Commission (SFC) and the Insurance Authority (IA) launched several sandboxes including the HKMA FinTech Supervisory Sandbox[3], InsurTech Sandbox[4] and SFC Regulatory Sandbox[5]

It allows for pilot testing of innovative solutions in a safe environment

- FinTech startups can collaborate with banks and other financial institutions to test their solutions, enabling them to access the expertise, resources and customer base of established players in the industry. Participation in the sandbox programme can also enhance the credibility and reputation of a startup, as they would have been approved by the HKMA and have demonstrated the potential value of their solutions

Current sandbox can be further enhanced to support FinTech innovation

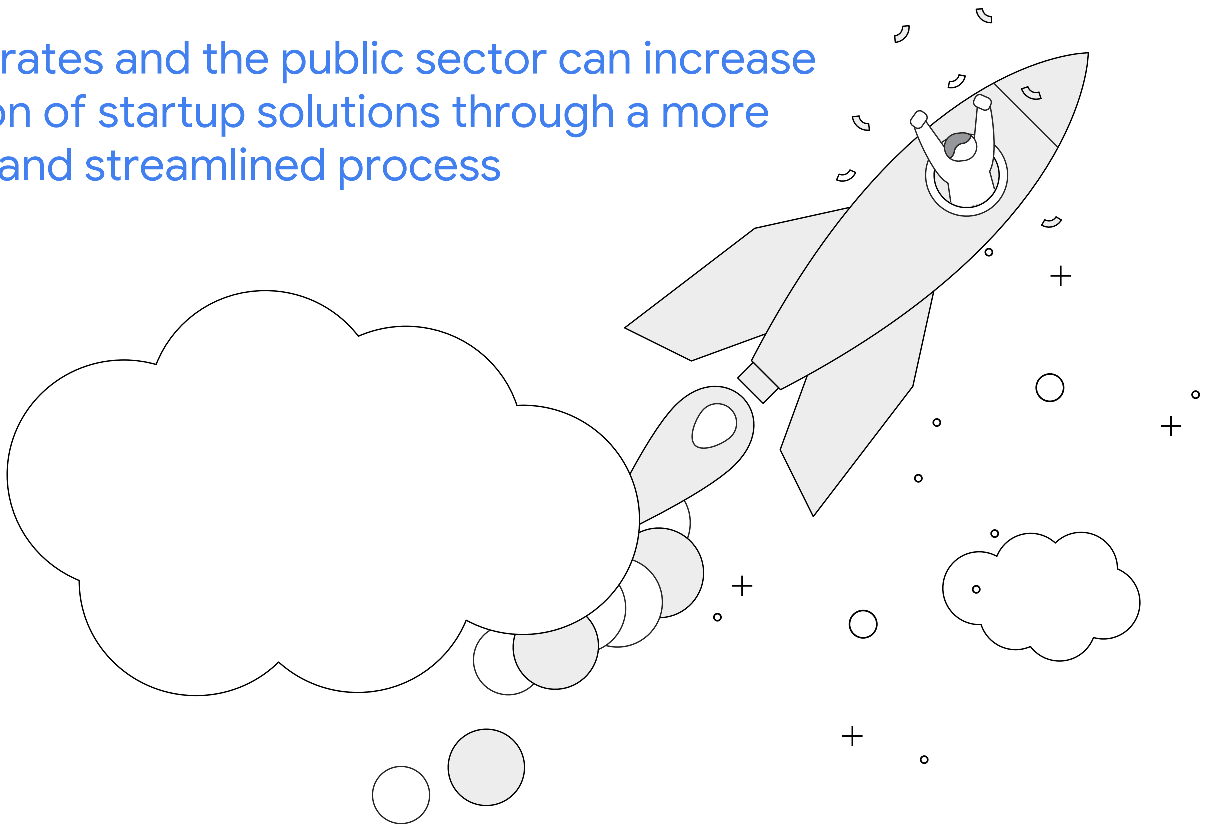
- Partnering with financial institutions: FinTech startups are required to partner with established financial institutions. While it might encourage digital transformation in FIs, it might limit the potential opportunities for startups

  Limited scope: The sandbox programme is limited in scope and is only covering certain types of financial activities and products. For example, the HKMA's FSS mainly focuses on RegTech applications such as AML/ CFT, credit assessment, transaction monitoring and does not cover activities related to deposit-taking[2]

"Hong Kong has a stable regulatory regime with attractive sandboxes and initiatives to pioneer FinTech development."
Patrick Lau, Deputy Executive Director, Hong Kong Trade Development Council

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem, (2) HKMA / Question: Below are some statements about startups in Hong Kong. Indicate your agreement or disagreement with them. Question: What components of the startup ecosystem have most helped your FinTech become successful in Hong Kong?Base: n = 81 FinTech startup founders and executives / n = 258 total respondents
Source (3) Hong Kong Monetary Authority, (4) Hong Kong Insurance Authority, (5) Hong Kong SFC

Both corporates and the public sector can increase the adoption of startup solutions through a more structured and streamlined process



Recommendation: Establishing an innovation team to facilitate trials could be a first step for corporates

Corporates could establish an innovation team to encourage startup collaborations

- With startup founders citing a lack of outreach channels (33%) as the main barrier to collaboration, corporates could consider establishing innovation teams to take both top-down and bottom-up approaches to encourage the internal adoption of startup solutions

- Corporates could consider taking a 'trial and error' approach and allocate a portion of their budget towards setting up trials. This would allow for more collaboration and a greater tolerance of failure, with full deployment only being implemented once the trial has been deemed successful

- Corporates could also consider establishing their own incubation units/acceleration programmes or establish a more collaborative relationship with external incubators such as Cyberport and HKSTP as a means to vet startups

- To improve the adoption of startup solutions, corporates could consider assigning digital partners to each of their business units, who can understand the pain points and be accountable for exploring opportunities for startups. Additionally, corporates could proactively search for startup solutions in the external market to address the highlighted pain points

"It is a reciprocal relationship. For the group, we are learning what technologies there are and how these technologies can help with operational efficiency. Sometimes we don't even realise we have a problem, but by knowing there is such a technology we realise we can do something differently.

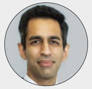
Vanessa Cheung, Group M.D., Nan Fung Development Ltd

The more effective corporations are those that have a digital transformation team that understands the real requirements, passes on the requirements to the startup and helps on the implementation.

Edmond Lai, Chief Digital Officer, Hong Kong Productivity Council

I encourage corporates to budgeting some fundings to setup trial programmes with startups, allowing corporates to test the startup solution while having an exit plan in case of failure.

Albert Wong, CEO, Hong Kong Science & Technology Parks



Each BU should have a digital business partner to help navigate what is needed and how it can be realised."

Saraansh Dave, Director eMobility, CLP

Recommendation: Streamline existing procurement process of public sector through further digitalisation and pre-fill technology

Continue streamlining the procurement process through digitalisation

As 27% and 24% of startup founders identified the approval and procurement process respectively as the key challenges of collaborating with the public sector, there are opportunities to streamline the procurement process through the following means[1]:

- **e-Procurement simplification:** To make the existing system more user-friendly, consider simplifying the bid submission process. This could be done by reducing the number of required documents or by providing clearer guidance on how to submit bids. Leverage the existing platform to communicate and share information throughout the procurement process
- **E-signature:** Allow applicants applicants to sign documents electronically, eliminating the need for physical signatures and reducing time and costs
- **Pre-fill technology:** Implement pre-fill technology that automates the population of basic information. This would minimise errors or areas where startups are unsure of what information is needed when filling in forms, helping to expedite the overall approval

"Government may have more bite-size procurements. Digitalisation can help with the new process."
Allen Yeung, Founder and CEO, Intelli Global Corporation Limited

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: What were the key challenges your startup faced when collaborating and/or seeking to collaborate with the public sector in Hong Kong?
Base: n = 258 Hong Kong startup founders and executives

Recommendation: Quasi-government organisations could take lead in building more use cases to encourage adoption of startup technologies

Quasi-government organisations could take a leading role in adopting innovative startup solutions as use cases

- **Build use cases:** Adopt more technologies by startups as a pioneer, providing a confidence boost to both the public and private sectors. The organisations can develop and demonstrate use cases of startup technologies, showcasing their potential applications and benefits to potential customers and investors

- **Marketing:** Collectively promoting and marketing use cases that were adopted by public bodies with proven success stories. This will give confidence to other public bodies to adopt startup technologies. For instance, OGCIO partnered with a local startup[1], Health View Bioanalytic Limited, to develop eHRSS, a digital platform that allows authorised healthcare professionals in Hong Kong to access and share patients' health records electronically

- **SmartLab initiative:** Work with startups to identify potential use cases for their solutions. This could involve identifying current pain points, engaging with potential customers and users, and analysing data to identify specific problems and needs

"Someone within the government has to be a honey bee to spread information and find the right receptor to connect with outside innovation, and that culture does not exist yet.

Allen Yeung, Founder and CEO, Intelli Global Corporation Limited

Quasi-government organisations can play a key role in testing and adopting startup solutions, given their mission to support startup development. By taking the lead in adopting these solutions, they can encourage other government organisations and departments to follow suit, particularly those that may be less risk averse."

Peter Yan, CEO, Cyberport

Source: 1) Hong Kong Office of the Government Chief Information Officer (OGCIO)

Recommendation: Enhancing scope and coverage of sandbox might further boost FinTech adoption rates

Remove mandatory partnership requirement

Removing the mandatory partnership requirement between FinTechs and financial institutions can enhance innovation in Hong Kong. The current requirement may limit innovation due to potential misalignments and the challenges startups face in establishing these collaborations. Its removal would follow the example set by the UK's sandbox initiative[1], which accepts applicants from all stages and enables FinTechs to test their solutions without corporate collaboration. This would enable more FinTechs to participate in the sandbox, promoting further innovation and development. Additionally, creating a structure for startups across different stages of the business cycle, similar to the innovation pathway and digital sandbox programme used in the UK for seed and early-stage startups that are not yet ready for pilot testing, can support startups in navigating regulations and gaining access to data sets to test and build prototypes

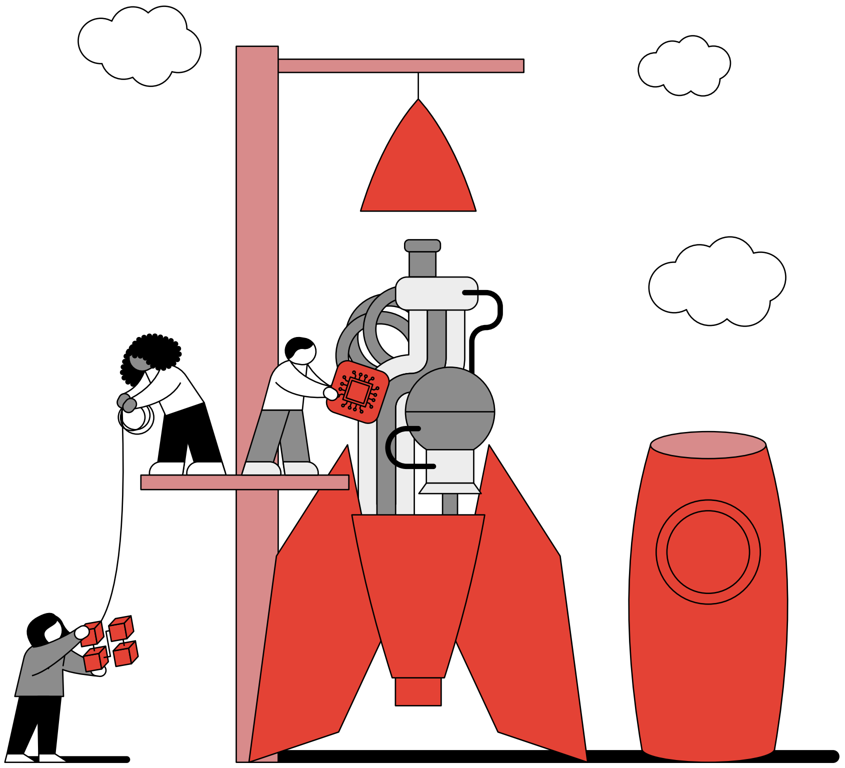
Expand international collaboration

The Singapore sandbox programme has established partnerships with other sandbox initiatives around the world. To further promote international collaboration and innovation, the HKMA, SFC and IA could consider establishing similar partnerships. These partnerships can facilitate the exchange of ideas, knowledge, and best practices, ultimately driving innovation and growth in the Hong Kong FinTech industry

Scope expansion

Expanding the coverage of sandbox programmes beyond current themes like RegTech would allow a wider range of applications, such as mobile app enhancements, APIs and DLT, to be tested. This would diversify the pool of FinTech in Hong Kong, where adoption rates of these technologies in the HKMA's Fintech Supervisory Sandbox are only 9%, 6%, and 3%, respectively. Compared to the UK sandbox, which has 12 focused applications including AI, DLP, and data analytics, Hong Kong's sandbox could potentially benefit from a broader coverage to encourage more diverse and innovative applications

Source: (1) United Kingdom Financial Conduct Authority



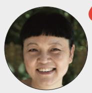
2.4 Technology enablement

Despite growing openness to collaboration by corporates and the public sector, startups must continuously enhance their solutions to meet evolving needs and demands

Web3 and AI are emerging technologies amid growing demand for digitalisation

Web3 and AI are emerging technologies with numerous applications in the market

Web3



“Web3 and crypto are expected to see massive growth and offer many opportunities.”

Jayne Chan, Head of StartmeupHK, InvestHK

AI

“Another area that is up and coming is AI and big data.”

Allen Yeung, Founder and CEO, Intelli Global Corporation Limited

Startups are leveraging these emerging technologies to meet increasing demand for digitalisation across various sectors

Financial Services
- **Web3:** Crypto exchanges, DeFi
- **AI:** Risk management and fraud detection

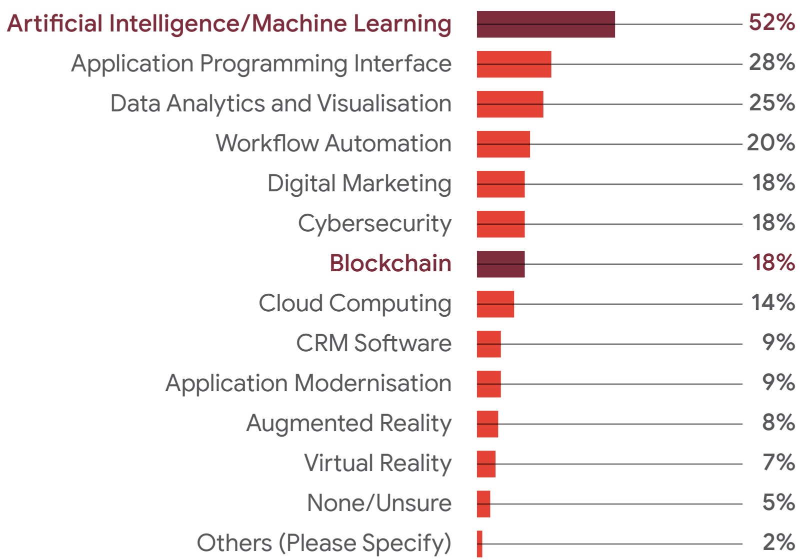
Health and Biomedical
- **Web3:** Patient electronic health records
- **AI:** Medical imaging and diagnosis

Retail
- **Web3:** AR/VR store for customer experience (omnichannel experience)
- **AI:** Personalised (product) recommendations

Logistics
- **Web3:** Supply chain traceability
- **AI:** Route optimisation

Strong demand and potential benefits are driving startups to invest in AI/ML technologies

Digital technologies that startups are planning to adopt/invest in/use in the next three years[1] (% of startups)



AI/ML is the top investment priority

AI has been around for a while and there are now many known commercial use cases across all sectors that corporates will be familiar with. According to Google's Smarter Digital City 4.0: AI for Everyone report, demand for the technology is also on the rise: 62% of Hong Kong businesses are planning to increase AI investment in the future[2]

Blockchain yet to fully gain traction

Compared with AI technology, blockchain is perceived as less of an investment priority – despite its key role in Web3. The majority of use cases are currently restricted to FinTech, while investment by startups may also have been held back by the complexity of the technology and the need for specialist talent

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem, (2) Smarter Digital City 4.0: AI for Everyone / Question: Which of the following digital technologies/solutions are you planning to prioritise, further invest in and/or develop in the coming three years?
Base: n = 258 Hong Kong startup founders and executives (n = 81 FinTechs, 177 Non-FinTech)

Additional focus on commercialisation, talent development and infrastructure can help facilitate the growing needs and applications of AI

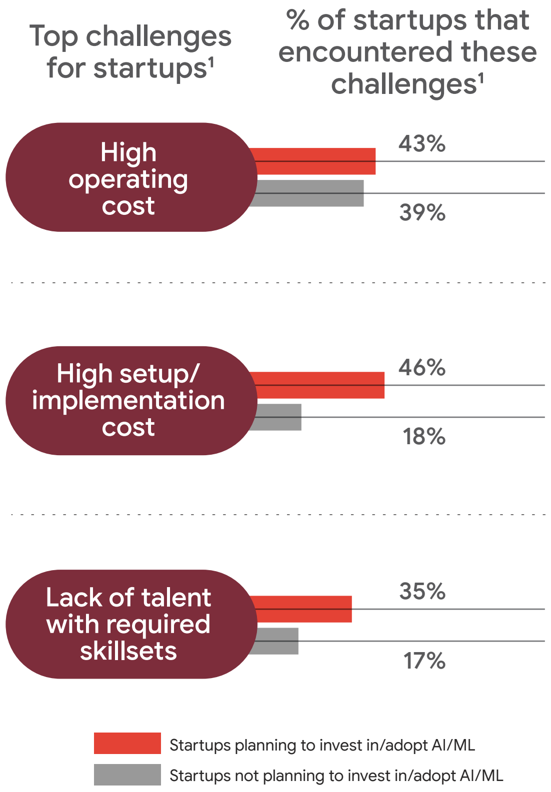
AI/ML is the top investment area for startups, with applications in multiple areas

- **Automation of business operations:** Improve operational efficiencies by helping BU's streamline operations. Reduces both front-end and back-end costs and workload in areas such as administration, allowing companies to focus on more complex issues
- **Informed decision-making:** AI can help in the analysis of large amounts of data, providing accurate forecasting on how to best target customer segments
- **Customer-centricity:** Generative AI can create hyper-personalised experiences for customers through one-on-one humanised responses and highly relevant recommendations, building greater trust and engagement with customers

Despite the growing trend, startups focusing on AI still face challenges in developing and commercialising their solution

- **Opportunities to commercialise AI solutions:** Despite the Hong Kong government's efforts to promote the adoption of AI solutions, including the development of an ethical AI framework and the provision of funding for AI startups, there could be further collaboration between the government and startups, so that AI startups could accelerate and further develop their solutions
- **Shortage of talent:** Similar to challenges encountered by other types of technology startups, Hong Kong faces a shortage of talent working in its local market. Although Hong Kong is home to a strong pipeline of local AI talent, once trained these talents are often lost to other markets in the region, such as Singapore, due to the lack of competitive compensation
- **Demand for infrastructure (Specific to development of highly sophisticated ML models):** Most AI startups could use cloud-based platforms for scalable AI/ML solutions. In cases where highly sophisticated ML model such as LLM and scientific computing model is needed, local supercomputers or high-performance cloud platforms could speed up the development. Hong Kong AI industry could have more such infrastructure for such use cases
- **High costs:** There are high costs associated with developing AI/ML solutions from scratch due to the resources required for both infrastructureand software to build it up. As a result, there is a growing trend for AI startups to leverage solutions from TPP as it can help reduce various costs, such as setup and operating costs

High cost and lack of skillsets are the key challenges for startups, particularly for those planning to invest and adopt AI/ML technologies



Key observations

Many pre-series A startups adopt open source solutions for their infrastructure. However, the operating and maintenance costs can be very high, particularly for managing cybersecurity risks and vulnerabilities. There will also be a need to continuously update different features, which could be prevented if startups use TPP solutions

There are costs associated with integrating new technologies into existing capabilities. It may also prove to be costly to switch from the technological progress a startup may have already made into a new technology. In addition, the cost of developing proprietary technology solutions such as AI/ML can be prohibitively high – both in terms of time and resources

There is a shortage of mid and senior level engineers and architects in Hong Kong, which are necessary for startups developing technologies in areas such as AI/ML, blockchain and cloud computing. Startups may also face more difficulties in attracting talent compared with established businesses due to the need to match elevated salaries in the industry

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: Which of the following digital technologies/solutions are you planning to prioritise, further invest in and/or develop in the coming three years? / Question: What are the key challenges for your startup when adopting digital technologies/solutions ?
Base: n = 258 Hong Kong startup founders and executives (n = 133 startups planning to invest in/adopt AI/ML, n = 111 startups not planning to invest in/adopt AI/ML)

Leveraging AI technology in operations and in the solution

Overview

SleekFlow

SleekFlow is an omni-channel platform that helps companies and users manage communication channels. It is using AI to improve customer experience, the efficiency of sales and marketing and to streamline its operations – all in a cost-effective manner

How Sleekflow is using AI

Predictive analytics for targeted marketing

- Leverage predictive analytics to create precise customer segmentation into corresponding market flows
- Provide retailers with a better understanding of customer needs and how to improve loyalty

AI in business as usual (BAU)

- Is integrating generative AI into its day-to-day operations
- Augmenting human capabilities in areas such as content generation and to adapt content for cross-channel distribution
- Freeing up human resources by responding to customer inquiries

Digitalisation and streamlining processes

- Training AI chat box through uploading of materials, building an extensive internal knowledge base
- Recommend products based on chat history
- Condense large amounts of data and information

Generative AI to improve customer support at retailers

- FAQ chatbot
- Recommended replies
- Response enrichments
- Conversation summarisation

Key success factors

Leveraging TPP solutions to reduce costs

- SleekFlow leveraged pre-built AI technology and OpenAI cloud platforms as the basis of its AI chatbox solution
- Aims to further utilise other AI SaaS and PaaS platforms for image processing, strengthening connectivity and data integration

Importance of data

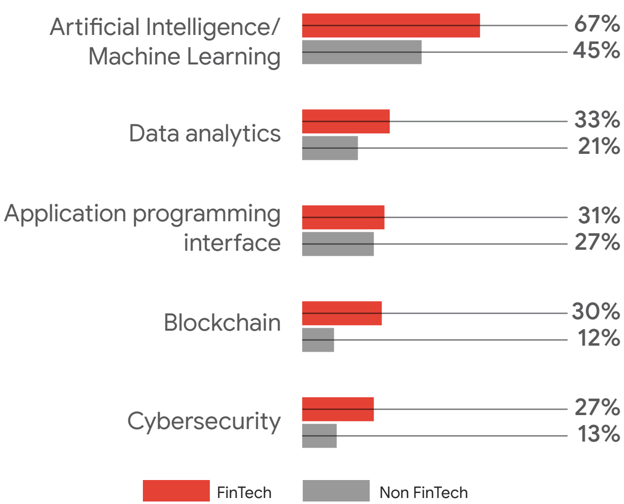
- Plans to expand its integration and maximise leveraging of data from existing e-commerce sources (e.g. Shopify and Salesforce) to increase accuracy of AI
- Ensure all AI-generated responses are well-informed by inventory and product data, minimising errors

“I believe that AI will be an indispensable part of business in the next three years and become the driving engine of various industries.”

Henson Tsai,
CEO & Founder, SleekFlow

FinTechs show higher willingness to invest in AI, as well as growing interest in blockchain and Web3 technologies

Top five technologies FinTechs are looking to invest in and adopt[1]



AI is an area that financial institutions have been investing in for many years, for instance applications in anti-money laundering (AML) or fraud detection. It is expected to remain a key investment area for banks over the coming years and the survey suggests that FinTech startups have become more keen to meet that demand. A previous study by Google into Hong Kong's FinTech ecosystem had found that only around half of both early-stage and late-stage FinTechs had perceived AI/ML as an important technology for product innovation[2]

There is more interest in **blockchain** among FinTech startups than other sectors as the majority of use cases for the technology has been found in the financial services industry. Growing regulatory scrutiny is also focusing on blockchain and Web3 topics such as virtual assets, crypto, decentralised finance (DeFi) and Utility NFTs. With Mainland China having banned all transactions of crypto assets, Hong Kong has also attracted startups from the mainland that are focusing on pursuing blockchain models in areas such as gaming and digital art

"In the banking sector, the wave of digitalisation is cresting around AI and Web3, making AI undeniably the most influential and revolutionary tech phenomenon of 2023."

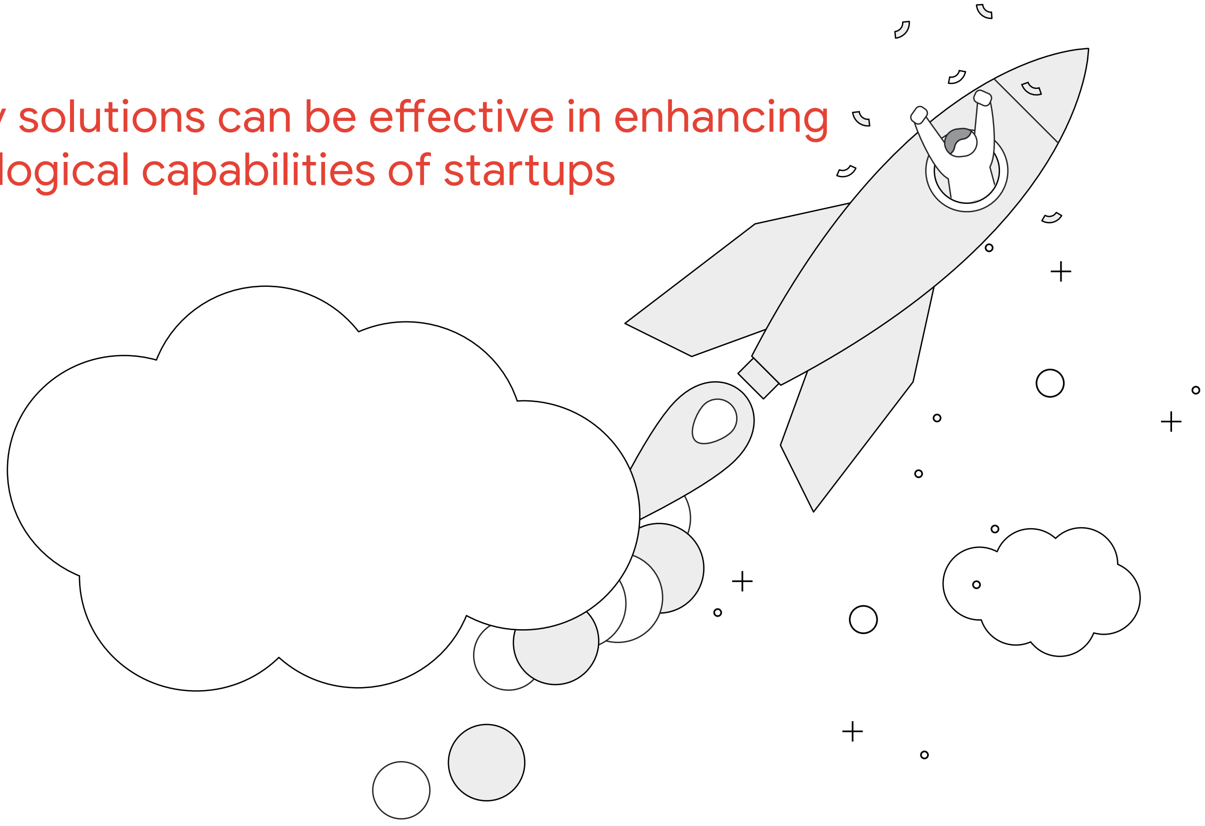
Medhy Souidi, Head of Transformation & Ecosystems, DBS

"The policy statement on the development of virtual assets sets out that Hong Kong is actively embracing financial innovations related to Web3 and promoting steady and prudent market development."

Winnie Tang, Founder, Smart City Consortium

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / (2) Smarter Digital City: Advancing Hong Kong's FinTech Ecosystem / Question: Which of the following digital technologies/solutions are you planning to prioritise, further invest in and/or develop in the coming three years?
Base:n = 81 FinTech startup founders and executives / n = 258 total respondents

Third-party solutions can be effective in enhancing the technological capabilities of startups



Recommendation: Exploring third-party solutions in infrastructure or application development might help overcome high costs

Startups should focus on developing their core competence and utilise TPP solutions to reduce costs at both the infrastructure and application level

Developing the entire infrastructure layer/model of a startup solution can be prohibitively expensive. Instead, startups can leverage PaaS or SaaS solutions offered by TPPs that have already developed the underlying technology, such as NLP, LLM or Visual AI, and access it via an API without the need to train their own AI models from scratch. TPP and other solution providers also offer specific pre-trained models that are no code/low code, enabling startups to really focus on developing their core competence. By adopting this solution:

- Startups can reduce setup/implementation costs as they do not need to build/train the infrastructure
- Startups can also reduce operating and maintenance costs as they will not be managing cybersecurity risks and feature updates. They will also be able to reduce costs by not having to host the infrastructure
- Startups that adopt a TPP no code/low code pre-trained model can also overcome challenges related to a lack of relevant skillsets

- Startups looking to enhance their applications/features should consider adopting pre-built TPP solutions, rather than developing their own solutions
- Startups that have reached a certain level of development and require further enhancement of their solutions should consider adopting TPP solutions, rather than developing from scratch. For example, startups can leverage pre-built solutions like maps API to save time and resources, while focusing their resources on areas of their key competences

“Companies are more willing to try new technology generally. More companies are also willing to pay for software on a monthly or yearly basis rather than developing from scratch. This is very scalable in Hong Kong and SEA.”

Henson Tsai, Founder & CEO, SleekFlow

Recommendation: Government and large corporates also have a role to play in helping startups adopt new technologies

Corporates and TPPs can provide startup-exclusive programmes, offering TPP solutions and support at a lower price or with additional perks

- Technology companies can provide startup-exclusive programmes that offer infrastructure or application development support at a lower price or with additional perks such as transferrable credits to upgrade their technological capabilities with newer solutions
- Corporates can also engage in seminars and events to educate startups on the benefits of adopting TPP infrastructure, which can result in lower operating costs in the long run compared to open-source products

Government could establish startup-exclusive subsidies to boost the adoption of new technologies

- The government could establish startup-exclusive funding programmes to facilitate the upgrading of their technological capabilities, for example a startup-specific Technology Voucher Programme (TVP)
- A long vetting and assessment process can discourage cash-limited startups from investing in digital solutions. The ever-changing nature of startup solutions also means that the technology they seek to invest in may no longer be relevant by the time approval is granted
- By establishing a separate startup-exclusive TVP stream, it could help significantly reduce the application and approval time needed and encourage more startups to invest in their technological capabilities

Recommendation: Corporates and FIs can provide more data access to improve AI/ML capabilities of FinTechs

Public sector can provide more data to improve FinTech/AI's understanding of consumer habits and preferences

- The Commercial Data Interchange (CDI) initiative by the Hong Kong Monetary Authority (HKMA) is providing banks with consented access to alternative data of corporates shared by data providers, such as e-trade declaration, payment and credit reference data. It has the potential to foster the development of innovative solutions, in particular in the area of credit assessment and approval. With more data providers and use cases to come, CDI could open up new opportunities to help improve the adoption of novel technologies such as big data analytics and Federated Learning

- While financial data is important to FinTechs and banks, non-financial data such as corporate data from the Companies Registry can streamline the KYC process. Enriching CDI's data sources with additional data from both public and private sectors could unlock new opportunities for FinTechs and banks to co-create innovative solutions and ML models that lead to better outcomes for corporate customers, particularly SMEs

Financial institutions can launch trial programmes to access financial data and improve their AI capabilities

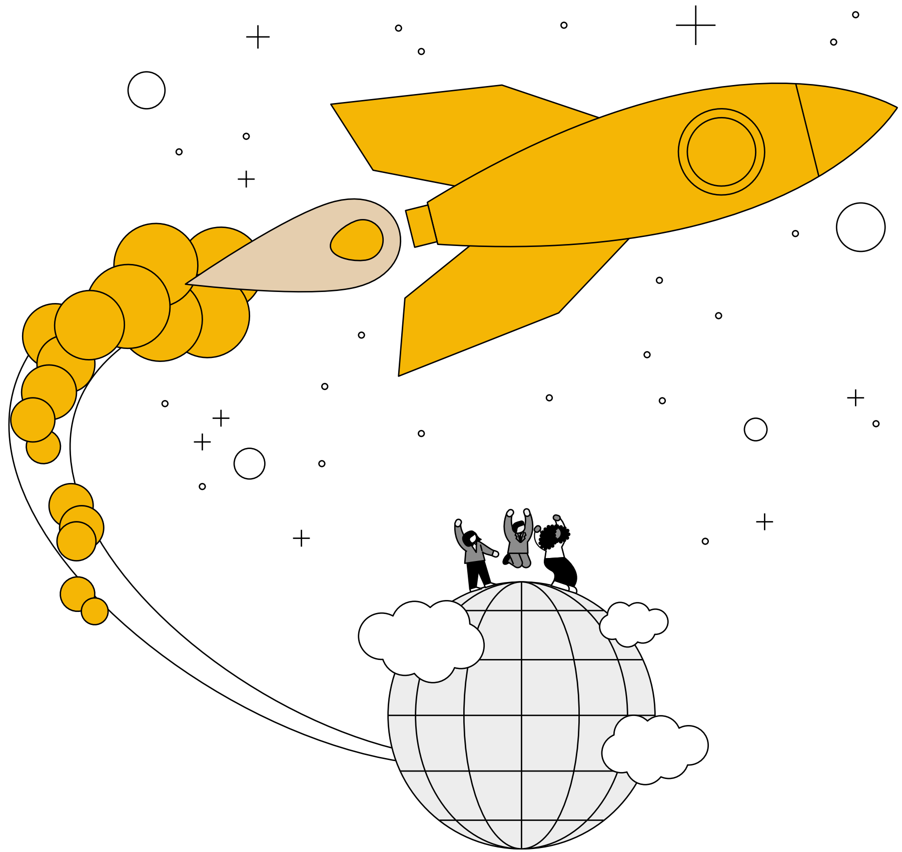
Financial institutions (FIs) can develop trial or testing programmes with FinTechs, granting them access to internal databases on a trial basis as a means to improve their AI technology through access to larger data sets. This is a mutually beneficial situation as FinTech solutions will be tailored to the specific data and operational needs of a FI, allowing them to adopt a fully-customised solution once it is ready

Data required	AI use cases in FinTech[1]
Credit history, customer data, financial statements	Enhance credit risk management
Historical fraud patterns, information of customers/businesses	Streamlined compliance (fraud detection)
Compliance data, risk data, customer data	Streamlined compliance (KYC, AML)
Customer transaction history, budget information, budget goals	Automated customer services/robo advisory

> "Since its launch last year, CDI has allowed banks to access alternative data of corporates with consent, thereby creating opportunities to streamline banking operations and enhance their risk management processes. Plans are underway to broaden the spectrum of data, including government and catering services data, with the aim of exploring more effective and efficient KYC solutions."

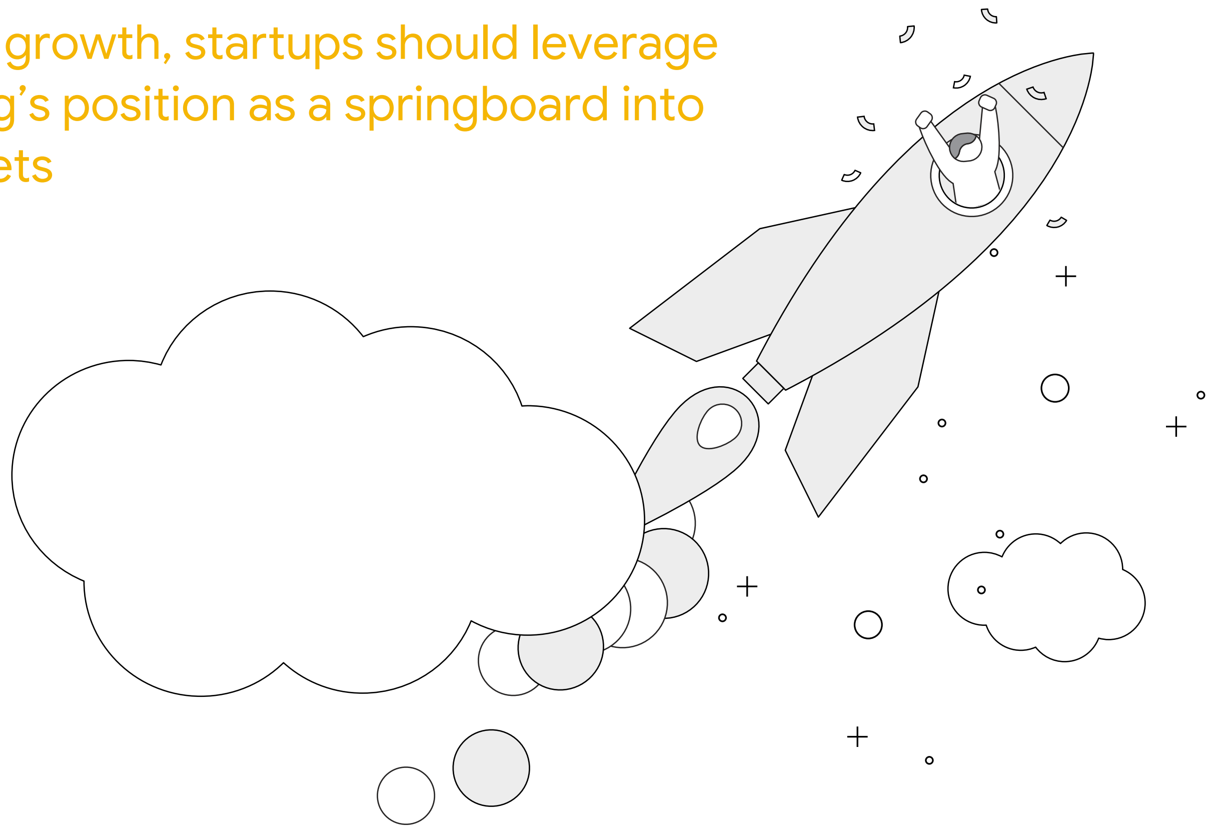
Nelson Chow,
Chief Fintech Officer, Hong Kong Monetary Authority

Source: (1) HKMA's 2021 AV/BD Report

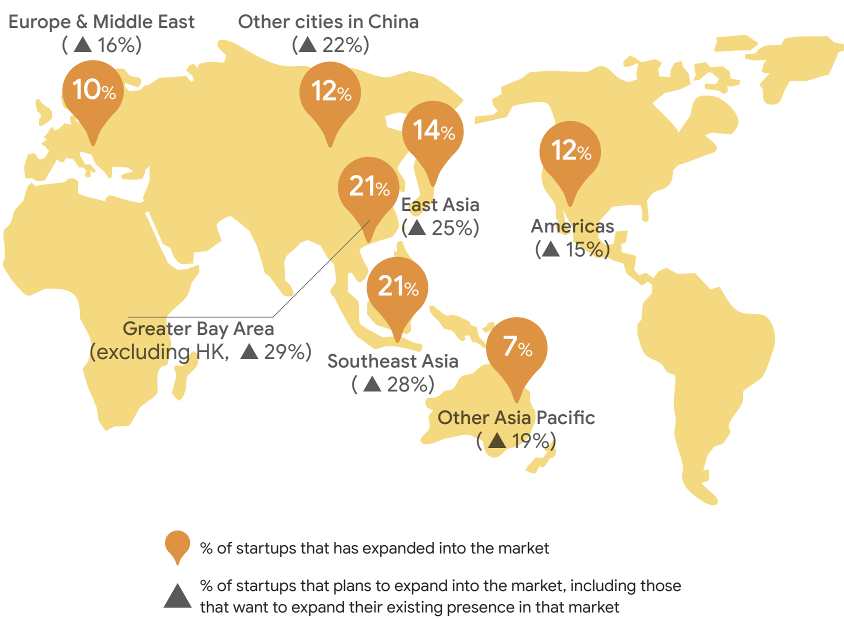


2.5 Growth

To sustain growth, startups should leverage Hong Kong's position as a springboard into new markets



>51% of respondents have used Hong Kong as a springboard to expand into new markets, particularly the GBA and SEA

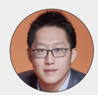


In addition to being a good testing ground, Hong Kong has a unique positioning as a connector to the GBA and SEA

- Hong Kong is a unique gateway to and from the Mainland China market:
  - Hong Kong is part of the Greater Bay Area, providing foreign startups with a gateway to a market with a GDP of US$ 1.7tn
  - Hong Kong's integration with international markets also enables advanced Chinese startups to access global markets and resources
- Hong Kong also has strong established relationships with SEA countries (more than 30% of HK startups has expanded into SEA)

"Hong Kong has a role to connect China with the rest of the world and the rest of the world with China.

Albert Wong, CEO, Hong Kong Science & Technology Parks



International capital in Hong Kong makes it a good market to test models that could be scaled in Southeast Asia and China."

David Chang, Partner, MindWorks Capital

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: In which markets is your company currently operating in? (Select all that apply)
Base: n = 258 Hong Kong startup founders and executives

Establishing a regional presence has been a successful model for startups to expand overseas

SleekFlow

Hong Kong is the headquarter for Greater China. Singapore is the regional headquarter for Indonesia, Malaysia and India. Brazil is the headquarter for Mexico and Columbia

“Singapore is the benchmark for SEA. As long as you have an office in Singapore, people respect you as a large SEA company.”

Henson Tsai, Founder & CEO, SleekFlow

</talentlabs>

The company is headquartered in Hong Kong and has expanded into Malaysia with a higher headcount to focus on penetrating the market and developing its technology. They also plan to set up an office in Guangzhou

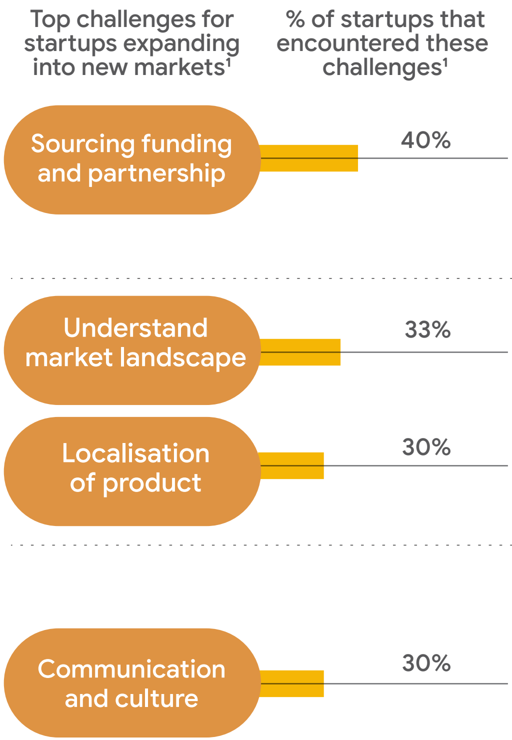
“For cross border set-up, Hong Kong could be more suitable for managerial/high value talent that needs to be on the ground communicating, while for certain cities of Malaysia you may have more junior developers that support the PM.”

Terrence Lok, Co-Founder & CEO, TalentLabs

Key takeaways

- Setting up a regional headquarter enhances the understanding of local markets
- Establish local sales and marketing presences to penetrate the market and outsource the development process to reduce costs

Difficulty in sourcing partnerships and understanding market landscape are among challenges when entering new markets



Overview

Without connections, startups do not have data points and base all their information on desktop research. Startups may also be heavily dependent on cold calling. Even when startups are selected to enter incubation programmes from quasi-government organisations, it is generally only the successful ones that are selected to join on overseas road trips

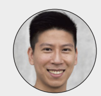
Due diligence on new markets by startups may be limited and based on desktop research. It can also be challenging to obtain certain market data, particularly if there are no other startups active in the market. Without sufficient information, the scope to localise products will be more limited. Startups approached for this study shared how 'trial and error' approaches to marketing are used in new markets, which can constrain limited resources

Expansion into new markets often leads to challenges with communication and culture, for instance dealing with local work-life balance, accreditation of qualifications, or language barriers. However, for IT professionals, given the widespread use of common computing or programming language in their daily communications, the internal transition period of aligning work culture, language and best practices should not be difficult. Nonetheless, this is still an area for startups to consider ahead of expansion

“The top three challenges that startups encounter, when they expand into a new market, include inadequate funding, market uncertainty and fierce competition.”

Patrick Lau,
Deputy Executive Director,
Hong Kong Trade Development Council

“There can be challenges in accessing corporate clients outside of your home market.”

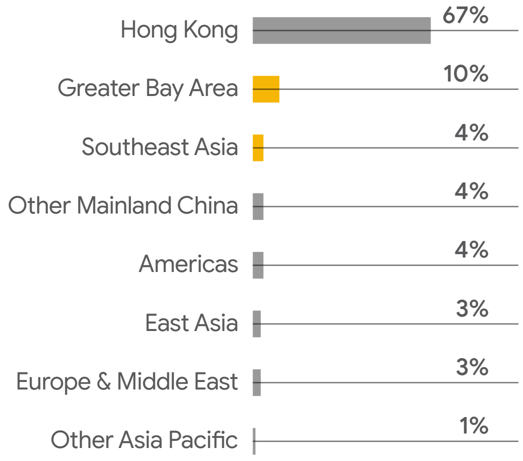


Joey Liu,
Co-Founder, Terminal 3

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: What are the biggest cross-border challenges for your startup to operate outside of Hong Kong ?
Base: n = 258 Hong Kong startup founders and executives

Overseas expansion requires startups to overcome unique challenges in GBA and SEA to diversify revenue sources

Revenue by geographical region[1]
(% of revenue)



Unique challenges involved in expanding into the GBA market include:

- Competition from other startups in the GBA is very tough – there is already an established ecosystem containing numerous successful local and international startups that have access to greater funding. Without a differentiated edge, a similar startup with the same proposition may replace yours
- Startups must be cautious to ensure their technology is not replicated due to varying IP regulations across jurisdictions
- Lastly, doing business in the GBA – or elsewhere in Mainland China – means that businesses must overcome challenges associated with finding clients, which can be overly dependent on the local connections a business may have

Unique challenges involved in expanding into the SEA market include:

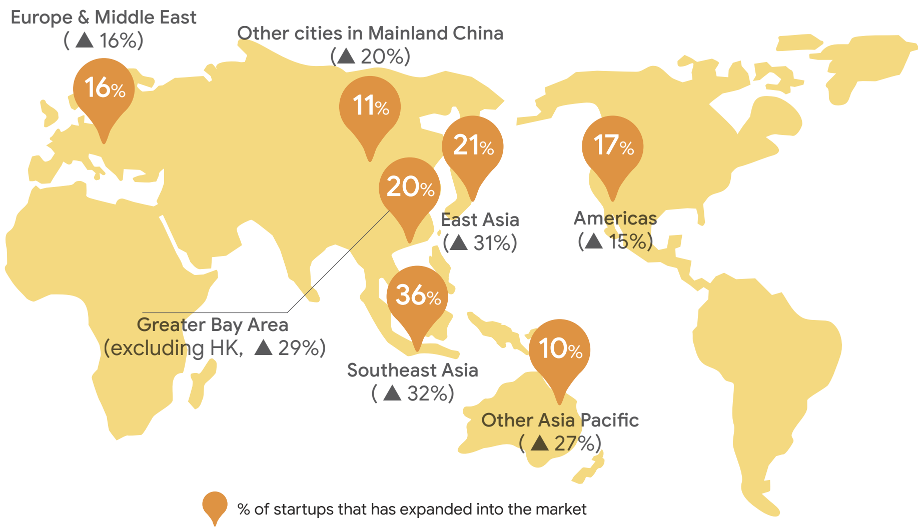
- While there is a close proximity to SEA, due to the different spending habits and consumer preferences, not all solutions developed in Hong Kong will be appropriate for this market
- Startups need to understand that the region is very fragmented and each individual market has its own unique characteristics, therefore the level of localisation required for each market could be quite heavy
- The levels of development also vary across each market – what works well in Hong Kong may only be applicable to a few major cities in a country in SEA

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: What % of your total revenue is generated from the selected markets?
Base: n = 258 Hong Kong startup founders and executives

FinTechs are more likely to have overseas operations and expansion plans, but face regulatory challenges

61%
of FinTechs has expanded outside of Hong Kong

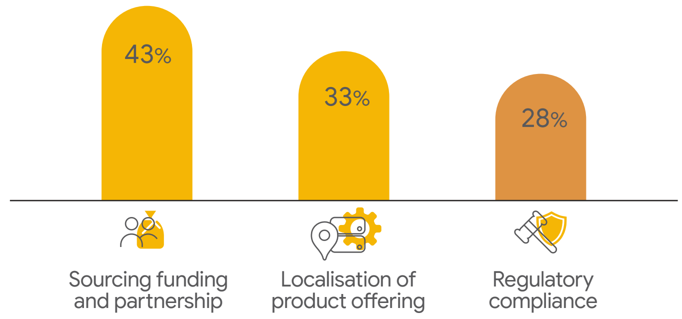
93%
of FinTechs plans to expand outside of Hong Kong



% of startups that has expanded into the market

▲ % of startups that plans to expand into the market, including those that want to expand their existing presence in that market

Unlike non-FinTech companies, FinTechs consider regulatory compliance among their top three challenges for growth and expansion[1]



FinTech is a highly regulated sector that has much more of a focus on regulatory compliance than most other startup sectors. Compliance is a particularly challenging issue when FinTechs expand into new markets as they will need to comply with new regulations to operate in that market, for instance obtain a specific operating license

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem / Question: In which market(s) is your company planning to expand in the coming three years? / Question: In which market(s) is your company currently operating in? / Question: What are the biggest cross-border challenges for your startup to operate outside of Hong Kong ?
Base: n = 81 FinTech startup founders and executives / n = 258 total respondents

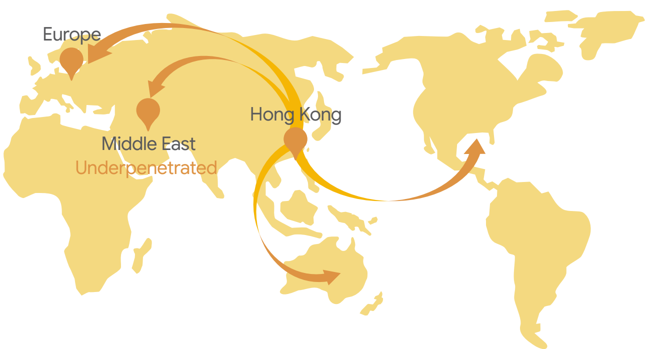
Startups should explore new market opportunities and leverage overseas presence of corporates

Google

Recommendation: Startups should look beyond GBA and SEA and consider emerging and underpenetrated markets for expansion

Hong Kong serves as a gateway to the world, which is not limited to just the GBA and SEA

- Hong Kong can be considered as a springboard to the rest of the world, with a 51% or 86% of startups having expanded outside of Hong Kong or having plans to do so respectively. While the majority of expansion is closer to home – with just over a third of startups having expanded into the GBA and/or SEA – startups should consider expansion on a global scale and not just restrict themselves to these two regions
- An emerging startup market such as the Middle East, which has an abundance of private funding available as well as supportive startup policies, should be a key market to expand into. However, only 10% of startups have already expanded into this market, while 16% has plans to do so at present[1]



Emerging and underpenetrated markets such as the Middle East should be on the radar of startups

The Middle East is becoming a hotbed for foreign startups due to its attractive tax incentives, ease of establishing a business, funding capabilities, relaxed visa rules and a supportive startup ecosystem. Funding in particular is a key strength: the Middle East raised a record-breaking US$3.94bn in 2022. With the region's sovereign wealth funds starting to invest in startups, this funding is expected to grow further. Its young and tech-savvy population also serves as a great consumer and talent base. The region has a strong focus on FinTechs, with 71% of funding in 2022 going into this industry[2]

Case study:
i2Cool, Hong Kong early-stage technology startup securing funding from Middle East

- i2Cool, with its pioneering sustainable product iPaint and passive radiation cooling technology, is leading the industry's transformation. iPaint, inspired by Sahara Desert ants, cools surfaces without any electricity, scoring over traditional heat-absorbing paints. With 95.02% solar reflectivity and 95.2% mid-infrared emission, iPaint significantly cools various surfaces, reducing energy consumption
- After success in Hong Kong, i2Cool is expanding its footprint into Mainland China's Greater Bay Area and the Middle East. The technology's first major application in these hot regions will be at the Dubai Mall, highlighting the company's commitment to overseas expansion and growth

Source: (1) Google's 'Smarter Digital City' survey of Hong Kong's startup ecosystem (2) Forbes, (3) HKTDC GPCA, (4) SCMP
Base: n = 258 Hong Kong startup founders and executives

Recommendation: Hong Kong's potential accession to RCEP and corporates' support for startups on overseas POC testing will help startups' overseas expansion

Hong Kong's potential accession to RCEP will help startups expand into new markets

- Hong Kong's potential accession to RCEP will create new investment opportunities
- Through RCEP, startups are able to gain access to larger markets with reduced tariffs, simplified customs procedures and streamlined operations that will offer business opportunities
- Establishing international relationships makes it easier for incubators to bring startups for site visits to these markets, with the added benefit of quasi-governmental support for Hong Kong-based startups in sourcing partnerships and understanding the foreign market landscape
- Public sector can also encourage corporates to establish partnerships or invest in local startups

Corporates can support startups by offering them the opportunity to use their overseas branches for proof-of-concept (POC) testing

- Corporates should seek to establish a win-win situation where they help startups expand overseas, either through enabling startups to conduct POCs at their overseas operations, or by leveraging their own network and expertise to assist startups in establishing a foothold in a new market
- Such an approach may see corporates benefit by gaining access to innovative new technology from a startup, but also the opportunity to build a strategic partnership (that could eventually be elevated to a joint venture) and gain new revenue streams
- Aside from corporates, VCs could also play a more strategic role. Rather than taking their traditional role in financing, they could seek to leverage their network to support the go-to-market strategies of startups and maximise the chances of overseas success

"Startups have to think beyond Hong Kong from day one. They should consider the different requirements of other markets early on, to avoid having to rework their solution down the line."

Edmond Lai, Chief Digital Officer, Hong Kong Productivity Council

"By leveraging their overseas clients and distribution network, corporations can help startups enter new markets and grow their customer base."

Peter Yan, CEO, Cyberport

Source: (1) HKTDC, GPCA, HK Consulate General of the State of Qatar, Statista

Recommendation: Startups to leverage existing incubation programmes as a strategic approach to expand overseas

- Given that 40% of startups have cited sourcing funding and partnerships as their biggest challenge in expanding overseas, it is beneficial for startups to leverage existing resources and support available in the market, rather than relying solely on their own funds or building their own network over time
- Hong Kong quasi-government organisations have played major roles in supporting market expansion of startups, either through business matching services, funding support or market entry opportunities
- Startups should increase their awareness of existing incubator programmes (such as Cyberport's Market Development Partnership Programme and HKTDC's Start-up Express) that are able to provide resources and support to succeed in their target markets
- Startups should take the opportunity to build connections and increase their exposure to these programmes as a stepping stone for expansion into new markets

Market Development Partnership Programme (MDPP) by Cyberport

- Guidance on intellectual property protection, local regulations and market access, as well as mentorship, to help startups develop their business plans, improve their product and enhance their marketing strategies
- Business matching services to connect startups with potential partners
- Funding support to cover expenses related to market entry

"Cyberport has a lot of collaboration agreements and plans in place to help Hong Kong startups expand into markets such as China, Malaysia, Thailand, Japan and even Europe."

Peter Yan, CEO, Cyberport

Start-up Express by HKTDC

- Allows startups to showcase their products at international exhibitions
- Provides pitching opportunities at annual international trade fairs and conferences, including the Asian Financial Forum, Asia Summit on Global Health, Belt and Road Summit
- Provides access to industry experts who can provide valuable guidance and advice

"We work closely with startups across sectors year-round to connect them with opportunities and help them find new partners, investors and markets."

Patrick Lau, Deputy Executive Director, Hong Kong Trade Development Council

Source: (1) Hong Kong Trade Development Council, (2) Hong Kong Cyberport

Recommendation: Cross-border sandboxes may help FinTechs overcome regulatory challenges when expanding overseas

Case study: Cross border sandbox established between India and Singapore - the FinTech Bridge

The Monetary Authority of Singapore (MAS) and India's International Financial Services Centres Authority (IFSCA) signed a cross-border sandbox agreement in 2022, allowing FinTechs to conduct cross-border experiments in both jurisdictions

The agreement enables Singaporean startups that have already joined the MAS regulatory sandbox to test their use cases in India's regulatory sandbox and vice versa. The initiative also aims to encourage cross-border innovation ventures, with startups in each market able to invite startups from the other to engage in joint collaboration projects. Additionally, MAS and IFSCA will share non-supervisory information on innovation in financial products and services. Web3, AI and green FinTech are expected to be major areas of focus for Singapore

Hong Kong could consider establishing cross-border FinTech sandboxes with neighboring ecosystems to help Hong Kong startups navigate regulatory challenges when expanding into new markets

A cross-border sandbox could prioritise Southeast Asia, East Asia and the GBA, as 36%, 21% and 20% of FinTechs have entered these markets respectively, while 32%, 31% and 29% plan to expand into these markets[1]

Coverage of such a sandbox could focus on areas of strength for local FinTechs, particularly those facing regulatory challenges such as RegTech, crypto and DeFi. Startups participating in Hong Kong's current sandbox programmes, such as the FinTech Supervisory Sandbox (FSS),Insurance Authority Insurtech Sandbox (IA Sandbox) and SFC Regulatory Sandbox (SFC), should be eligible to participate in the cross-border sandbox

The sharing of non-supervisory information on innovation in financial products and services, as well as general market information, can help to address challenges that FinTechs face when expanding outside of Hong Kong, such as tapping into funding and partnerships, and the lack of knowledge of new markets

Source: The Business Times

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Key Contributors (in alphabetical order by surname)

Alan Au
Managing Partner
GT Healthcare Capital Partners

David Chang
Senior Vice President
MindWorks Capital

Jayne Chang
Head of StartmeupHK
InvestHK

Hing Cheng
Executive Director of Corporate Development
Gobi Partners Greater Bay area

Vanessa Cheung
Group Managing Director
Nan Fung Development Ltd

Nelson Chow
Chief FinTech Officer
Hong Kong Monetary Authority

Francis Fong
Honorary President
Hong Kong Information Technology Federation

Brendon Joe
Head of Group Ventures & Research
CLP

Saraansh Jaimini Kumar
Director eMobility
CLP

Gabriel Kung
Chief Commercial Officer
Bowtie

Edmond Lai
Chief Digital Officer
Hong Kong Productivity Council

Patrick Lau
Deputy Executive Director
Hong Kong Trade Development Council

Joey Liu
Co-Founder
Terminal 3

Tim Lo
Co-Founder & CEO
Glassbox AI

Terrence Lok
Co-Founder
TalentLabs

Erica Ma
Managing Partner
CoCoon Ignite Ventures

Chung Ng
Senior Vice President
PCCW & HKT Group

Jeffrey Ren
Partner
OKX Ventures

Charleston Sin
Executive Director
MIT HK Innovation Node

Medhy Souidi
Head of Transformation & Ecosystems
DBS

Winnie Tang
Founder & Honorary President
Smart City Consortium

Henson Tsai
Founder & CEo
SleekFlow

Chua Hoi Wai
Chief Executive
The Hong Kong Council of Social Service

Albert Wong
CEO
Hong Kong Science & Technology Parks

Peter Yan
CEO
Cyberport

Allen Yeung
Founder & CEO
Intelli Global Corporations Limited

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Google
(in alphabetical order by surname)

Nellie Chan
Director, Google Customer Solutions
Hong Kong

Bradford Chan
Startup Success Manager, Google Cloud
Hong Kong

Jonathan Chau
Head of Strategic Partnership
Hong Kong

Peggy Cheung
FSI Lead, Google Cloud
Hong Kong

Henry Heung
Director, APAC Partnership Solutions
Greater China

June Lau
Field Marketing, Google Cloud
Hong Kong

Kathy Lee
Managing Director, Google Cloud
Greater China

Warren Li
Regional Lead
Venture Capital Business Development
Google Cloud Greater China

Wilson Ng
Account Executive
Google Customer Solutions
Hong Kong

Timothy Tam
Head of Government Affairs
and Public Policy, Hong Kong

Nancy Ting
Head of Consumer Marketing
Google HK & Greater China Creators

Catherine Wang
Communication Manager
China Mainland & Hong Kong

Marsha Wang
Head of Communications and Public Affairs
China Mainland & Hong Kong

Ben Wong
CMO
Google Greater China

Betty Wong
Corporate Communications Manager
APAC

Daniel Wong
Product Marketing Manager
Brand & Reputation
Hong Kong

Disaree (DiDi) Wong
Head of Google Cloud
Hong Kong

Rachel Yu
Communication Manager
China Mainland & Hong Kong

Dennis Yue
Head of Corporate Business, Google Cloud
Greater China

Michael Yue
Managing Director
Sales & Operations
Hong Kong

Michael Yung
Strategic Advisor, Google Cloud
Hong Kong

MRM
(in alphabetical order by surname)

Amy Cheuk
Senior Project Manager

Camie Lam
Marketing Project Manager

KPMG
(sorted by seniority)

Irene Chu
Partner
Head of New Economy & Life Sciences
Hong Kong

Zachary Wu
Partner
Strategy & Operations
Hong Kong

Helen Cheung
Associate Director
Technology, Media & Telecommunications
Hong Kong

Philip Wiggenraad
Manager, Publications
Hong Kong

Hok Hin Ng
Senior Consultant, Strategy & Operations
Hong Kong

Christy Wong
Assistant Manager, New Economy & Life Sciences
Hong Kong

Ryan Fung
Project Assistant
Hong Kong

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