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## Technopreneurship in China (1): Recent Innovations and Opportunities

The momentum of technological innovation is gathering strength in China, as people are inspired by the success of technology giants in the country and beyond. Enthusiasm is further fostered by government initiatives to encourage “a new pattern of innovation by the people”, in line with which the 13th Five-year Plan (2016-2020) is set to promote the advancement of mass entrepreneurship and innovation as a long-term strategy to facilitate growth. Now, makers and investors are rushing into different technological ventures – despite risks and keen market competition. This has produced huge demand from “technopreneurs” for not only financial resources but also support in areas such as technology, market connections and entrepreneurial development.

Hong Kong could be regarded as an important partner for the mainland’s technopreneurs, who are increasingly looking for enhanced access to foreign technology, international markets and additional financing channels in order to scale up their ventures. Coupled with Hong Kong’s inherent advantages, such as free flow of information and capital, this means technology players and investors based in the territory are well-placed to capitalise on the demand from flourishing technopreneurialism on the mainland.



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### Becoming a Nation of Innovators

China is now embracing innovation as a long-term strategy to sustain economic growth.



This is partly a response to slowing markets, which have posed challenges to many Chinese enterprises in terms of both domestic and export sales. Innovation is seen as one of the major routes to transforming and upgrading the country's industries. Accordingly, Chinese businesses and individuals are being encouraged to pro-actively re-invent themselves via innovation in order to add value to their business activities.

The community – especially youngsters, entrepreneurs and investors – has been inspired by the success of technology giants such as Alibaba and Tencent. Along with a more liberalised business environment, the number of technology-related start-ups in China – including technopreneurial ventures engaged in technological innovation – has increased exponentially in the last couple of years.

This momentum in favour of innovation is also bolstered by recent government initiatives. Back in 2014, at the Summer Davos Forum, China's Premier Li Keqiang suggested the country would step up institutional innovation, as well as innovation in science and technology, in order to foster growth in the "new normal" era. In a Government Work Report released in March 2015, it was stressed that the authorities would encourage "a new pattern of innovation by the people and innovation by all" as a way to create new impetus to growth.



The Chinese community has been inspired by the success of technology giants.



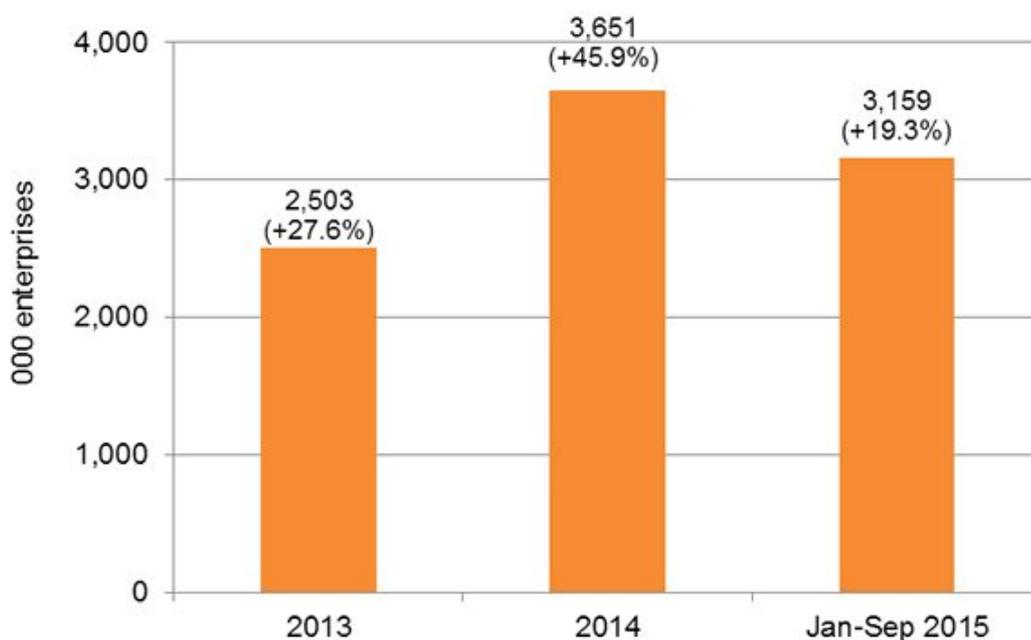
The momentum of innovation is bolstered by the recent government initiatives.

Following this, the 18th Central Committee of the Communist Party in October 2015 passed suggestions that the 13th Five-Year Plan would place extra emphasis on advancing mass entrepreneurship, encouraging technological innovation and promoting the development of new industries in a bid to inject new vigour into the economy.

Helped by reform of the company registration system, including the scrapping of minimum capital requirements, since March 2014 [1], the number of new companies established in China has surged over the last two years. Figures from the State Administration for Industry and Commerce (SAIC) reveal that the number of newly registered enterprises grew by 19.3% year-on-year to 3.16 million during January-September 2015, after a surge by 45.9% to 3.65 million in 2014. Notably, in 2014, the number of new set-ups registered in the areas of information transmission, software and IT services surged 97.8% to 146,700, and the number engaging in scientific research and technology services rose 70.3% to 262,600.



### Total Number of Newly Registered Enterprises in China

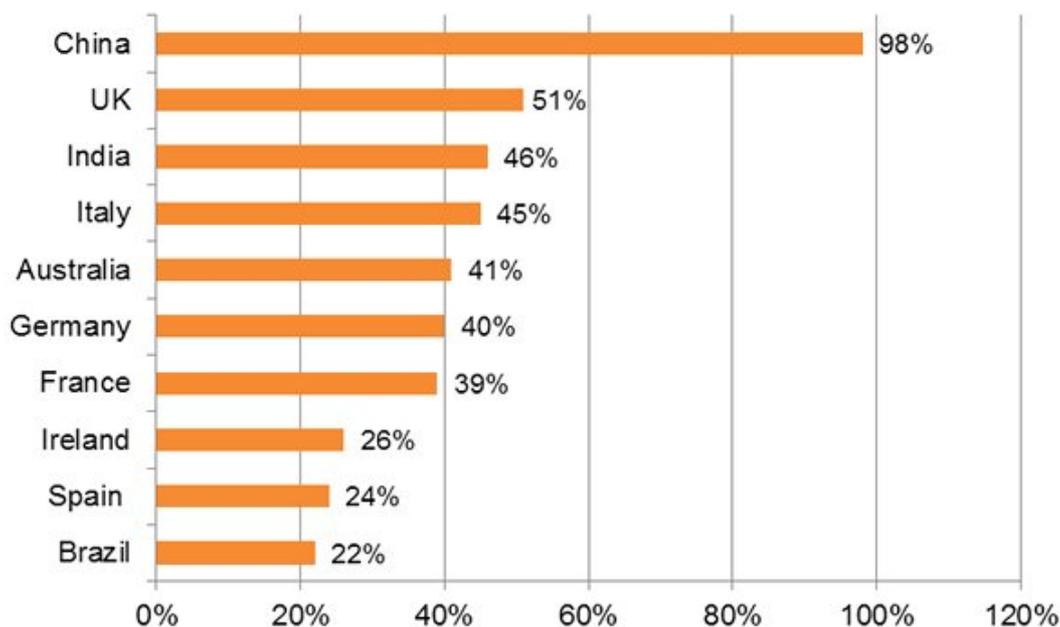


Source: State Administration for Industry and Commerce

Such development is in line with the survey results released in November 2015 by UHY International, an accounting and consultancy firm based in London. According to the UHY report, the number of new companies created in China in 2014 was nearly double the number created in 2010, up by 98% in the period. As a result, new business creation in China is outpacing that of the rest of the world, with the UK lagging a distant second (in terms of percentage increase in new businesses since 2010).



### Percentage Change in Number of New Businesses Created 2010-2014

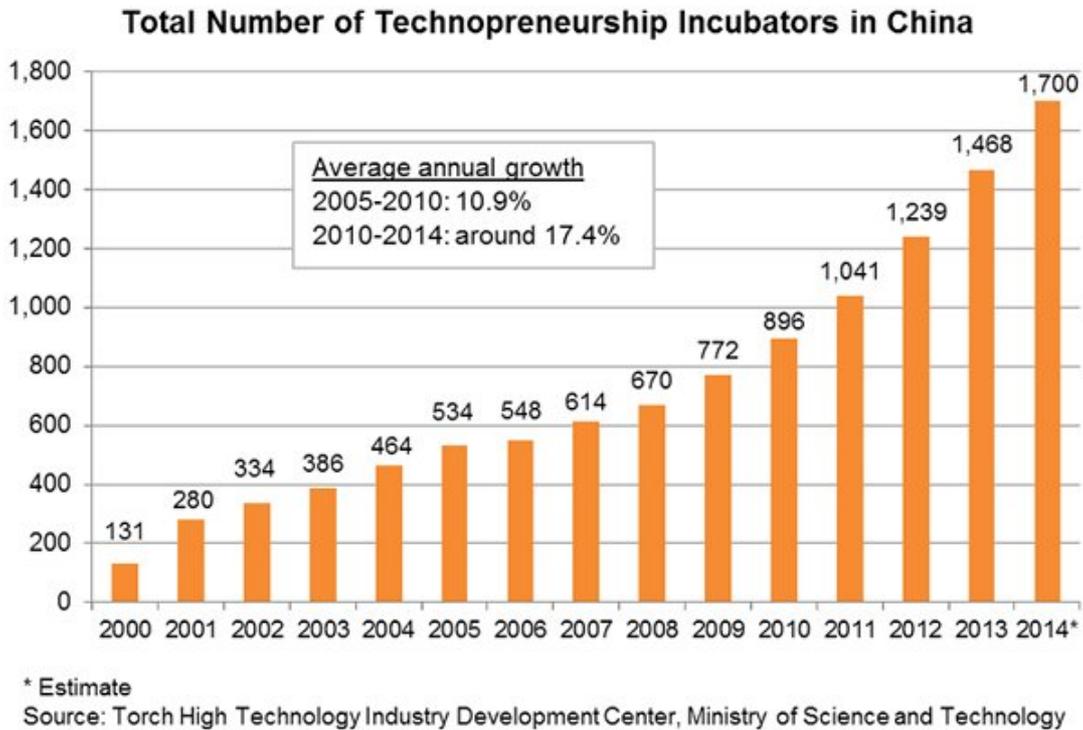


Source: UHY International Ltd

#### Flourishing Technopreneurship in China

The government has taken unprecedented steps to promote advanced Internet applications, technology and innovation as growth engines, including through providing subsidies and different kinds of capital financing. Also, local governments, institutions and private entities have been encouraged to set up incubators, accelerators and co-working spaces to nurture the development of new technological start-ups via provision of low-cost office space, equipment, mentoring assistance and sometimes seed money and capital to new businesses. Particular emphasis has been put on promoting technopreneurship, and the search for those who are capable of turning their technological savvy into viable, scalable businesses.

As stated in the 12th Five-Year Plan for the Development of Technopreneurship Incubators during 2011-2015 [2], the Ministry of Science and Technology (MOST) hoped to raise the number of recognised incubators in China from 896 in 2010 to 1,500 by 2015. But the actual development has outpaced the initial expectation, with about 1,700 incubators already recognised by the end of 2014.



Some industry observers even suggest that the total number of incubators, including those not yet recognised by the MOST, amounts to about 3,000 at present. This is due mainly to exponential growth since late 2014, when the government recognised innovation as the new impetus to growth. The HKTDC Research visited some technopreneurship incubators established in the Yangtze River Delta region (YRD) in late 2015 and learned that some of them had only been established for a few months, meaning they had not yet been recognised officially. Moreover, some incubators may allocate part of their resources to nurturing certain non-technological businesses – including design works or even education ventures – that are not related exclusively to technological innovation. Thus, they may not be on the MOST’s list as the Ministry’s criteria relate primarily to technological credentials.



An incubator in Shanghai (1)



An incubator in Shanghai (2)



As shown in the figures below, there were 1,468 recognised incubators, accommodating 77,677 incubatees – meaning each incubator nurtured around 53 incubatees on average – by the end of 2013. By the same date, incubatees had together obtained a total of RMB 44 billion in venture capital, as well as RMB 14 billion in subsidies from local governments. It can therefore be deduced that, on average, each incubatee was able to obtain some RMB 561,600 from venture capital investors, and government subsidies amounting to RMB 183,500.

**Capital Obtained by Technopreneurship Incubatees**

	2012	2013	2014 *
Number of incubators	1,239	1,468	1,700
Number of current incubatees	70,217	77,677	80,000
Number of graduated incubatees (cumulative figure)	45,160	52,146	n.a.
R&D made by current incubatees (RMB billions)	37.88	37.69	n.a.
Venture capital obtained by current incubatees (RMB billions, cumulative figure)	35.76	43.62	n.a.
Government subsidies obtained by current incubatees (RMB billions, cumulative figure)	15.16	14.25	n.a.

\* Estimates

Note: Year-end figures

Source: Torch High Technology Industry Development Center, Ministry of Science and Technology



### Hong Kong/Mainland Cross-border Partnership Opportunity

The number of incubation centres and co-working spaces in China has surged in the past couple of years, amid society's enthusiasm to embrace innovation to create impetus for business growth. They are particularly interested in nurturing young entrepreneurs and "makers" with their prime interest in technological innovation, in view of the success of certain technology giants in the country. The rapid pace of development, however, has also sparked concerns about the long-term sustainability of their businesses.

To meet the challenges, Hong Kong is in a position to assist mainland technopreneurships in opening up massive business opportunities, with its excellence in areas such as system integration and application, as well as marketing, finance and other professional services. With a cluster comprising local and foreign technology companies, technopreneurships from around the world can make use of the Hong Kong platform to kick-start their venture businesses .... ([More](#))

### Pursuing Technopreneurship despite Risks

It should also be noted these technological ventures come with significant business risks. Incubators tend to screen start-ups rigorously during the recruitment of incubatees – some incubators told the HKTDC Research that for every 150-200 "makers", on average only 20-30 candidates would be approved for further assessment. Recruited incubatees, they said, would also have to undertake on-going assessment. Some start-ups had been asked to leave after just three months in instances where their development did not satisfy the incubators, or if they had been unable to attract any investment. Many of these businesses are in fact very short-lived, with relatively few able to survive in a very competitive environment.

Those that are able to scale up will reach the so-called "Round A" stage, i.e. the first round of venture capital financing in exchange for stocks. Some relatively mature start-ups told the HKTDC Research that the valuation for their ventures had surpassed RMB 100 million in just 18-24 months. This explains why many makers and investors are very keen to pursue technopreneurial businesses, despite the high risks and failure rate.

[For further reference, see: [Technopreneurship in China \(4\): Hangzhou's Big Data Success Story](#)]

IT-related ventures are among the most popular start-ups and range from development of social media apps to utilisation of big data analytics for smart city applications. The teams usually comprise young makers and professionals with experience working for renowned companies in the TMT areas (technology, media, and telecom), as well as doctoral/post-doctoral graduates from mainland or overseas universities. They only require decent office space with internet access and equipment such as computers to begin their operations, thereby require a minimal amount of seed money to get going.



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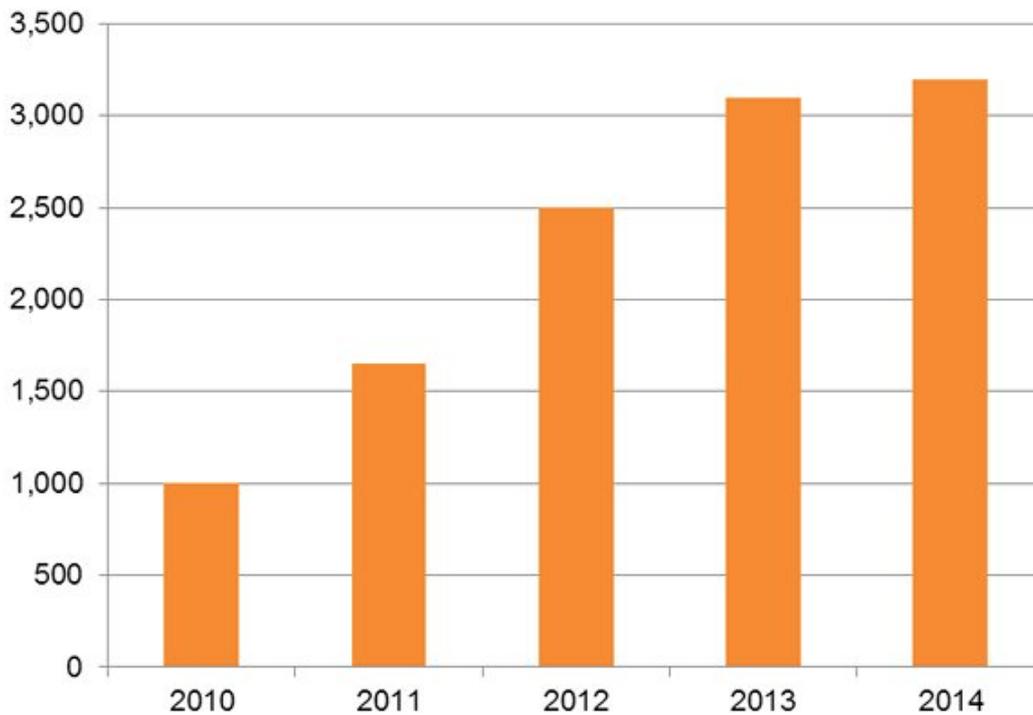


Some start-ups are focused on upgrading existing manufacturing processes.

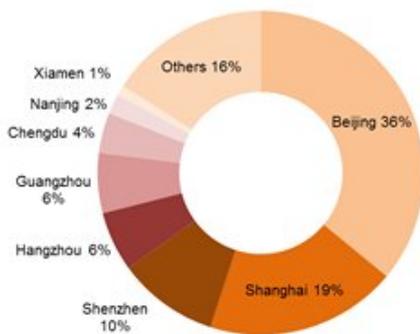
According to the Ali Research, the number of new start-ups in the area of mobile Internet surged to an all-time high, amounting to some 3,200, in 2014. Such technopreneurial ventures mainly concentrate in large mainland cities such as Beijing, Shanghai, Shenzhen and Hangzhou, and tend to focus on mobile applications for e-commerce, enterprise services, games and animation, finance, consumer spending, social media and more. But the surge in numbers of new mobile apps has led to intensified competition in the market, making it a tougher environment for newcomers. Ali suggests there is a watershed: start-ups must succeed in about 24 months, or they will fail.



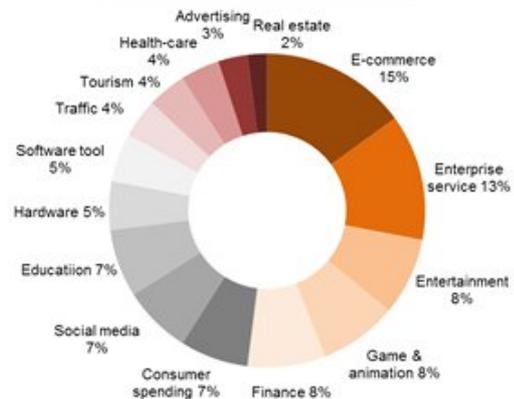
### Number of New Start-ups - Mobile Internet Applications



New start-ups by city 2014



New start-ups by business area 2014



Source: 《“移動互聯網+”中國雙創生態研究報告》, Ali Research, July 2015

On the other hand, many start-ups are in a hurry to tap the benefits of China’s “Internet Plus” strategy, a government plan to encourage integration of the Internet and mobile networks, cloud computing, big data analytics and the Internet of Things (“IoT”), into modern manufacturing, e-commerce applications, the banking industry and more. Some others are focused on upgrading existing manufacturing via development of advanced integrated circuit devices, high-end computer-controlled machine tools and new energy as is called for in the government’s “Made in China 2025” policy documents.

But for the area of advanced manufacturing, undertaking R&D on robotic equipment, for



example, would require substantial initial capital investment for acquisition of development tools and equipment. As for ventures related to financial technology, industry expertise is among the key drivers for the success of any start-ups, while industry connections to the right platforms are crucial for e-commerce ventures. It is therefore no surprise that start-up teams tend to comprise experienced personnel from the industries concerned, and their sources of seed money often include the leading companies in those industries.

### **The Evolving Needs of Emerging Technopreneurs**

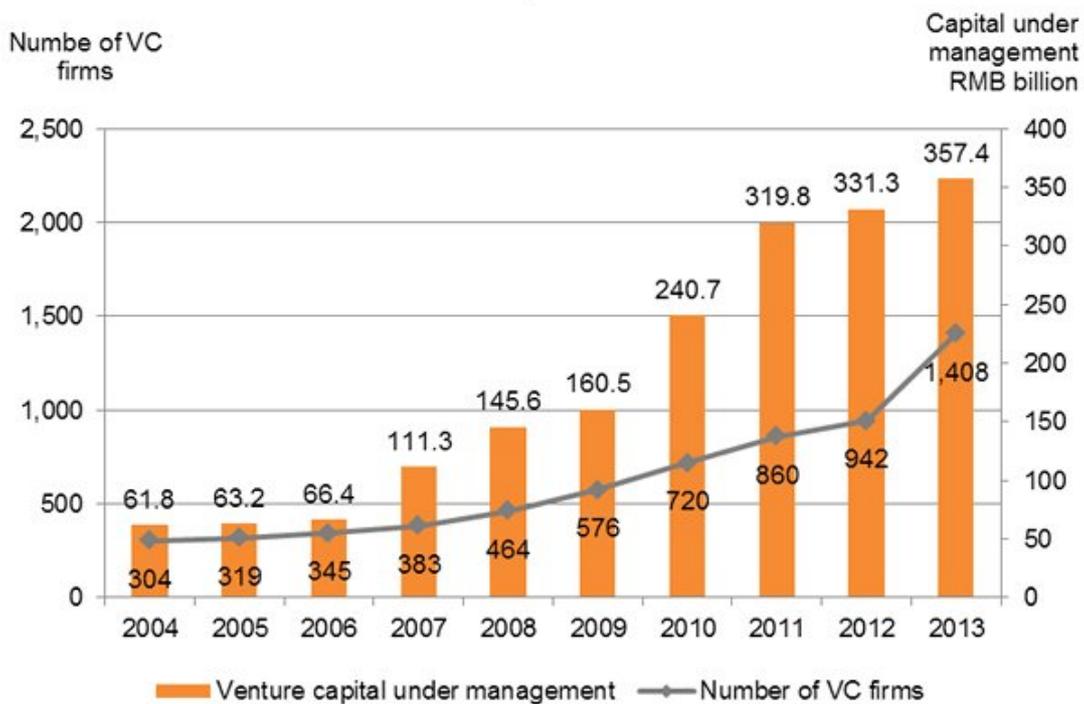
Unsurprisingly, finance is always among prime concerns of technopreneurs, including those at the early start-up stage. Initial funding such as seed money provided by angel investors is essential for start-ups to pay off their bills and operational expenses at the outset of their ventures. Continued financing such as venture capital tends to be key for those hoping to survive through the early start-up stage, or the so-called “death valley” of business development, to grow their businesses further, before they have the capabilities to raise funds or secure further financing from banks or other financial channels.

However, during its meetings with technopreneurs, incubators and related investors in the Yangtze River Delta, the HKTDC Research was impressed that finance is not the top concern of many start-ups at the moment. This is because there are a lot of funds looking for opportunities to invest in technological ventures in China.

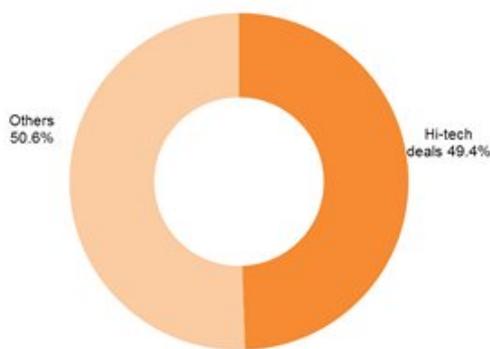
Notably, China is now regarded as one of the largest venture capital markets in the world. Venture capital under management in the country amounted to over RMB 357 billion in 2013, surging by 478% from the level of 2004. In particular, high-tech deals accounted for about half of cumulative venture capital investment by 2013, with 35% of these deals made when the investment targets were still at the seed or start-up stages.



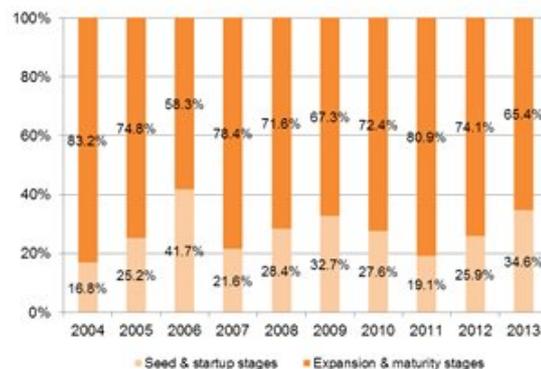
### Venture Capital in China



### Share of investment deals



Note: Percentage share in terms of cumulative venture capital investment amount in 2013.



Note: Percentage share in terms of investment amount by stage of investment.

Source: Ministry of Science and Technology

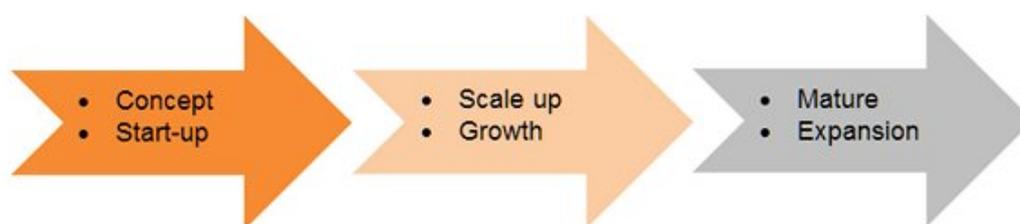
Meanwhile, various high-tech parks and economic development zones set up by local governments have also established their own incubation and acceleration centres. Local governments are also providing seed money and start-up funds to assist youngsters and makers in growing their ventures. Furthermore, the start-ups may also have recourse to equity crowdfunding platforms, which are now blossoming in China. Examples include zhongchou.com (眾籌網) and hi.taobao.com (淘寶眾籌). Businesses that are approaching a level of sustainability or scalability can also choose to seek further financing via listing on the National Equities Exchanges and Quotations (NEEQ), China’s so-called “new third



board” [3]. As a result, as long as makers are able to demonstrate an innovative and viable idea, they will have access to many different sources of funds to help their technopreneurial ventures, even despite the recent volatility of the financial market.

To successfully lure investors, however, technopreneurs must be able to demonstrate they have the capabilities and the technological savvy to turn their innovative ideas into viable and scalable businesses. In this regard, technopreneurs are keen to look for mentors, incubators and/or investors that can provide them with guidance and assistance in terms of entrepreneurial development, marketing connections, technological wherewithal or collaboration with relevant players, in addition to mere financial assistance. Such needs can be summarised as follows:

### Service Demands of Technopreneurial Ventures in China



- *Seed money and initial capital, plus low-cost working space to kick start the venture*
- *Relevant technical partners and assistance to turn ideas to viable business models*
- *Industry or market connections to make the business sustainable*
- *Venture and/or mezzanine capital injection at the more mature stage of development, helping ultimately public listing of the ventures on the mainland or overseas*

In view of these requirements, some technological enterprises and investors are joining forces to nurture start-ups, offering them both technological and financial resources. For example, the cloud computing giant aliyun.com of the Alibaba Group, the advanced manufacturing player Foxconn and the financial player Zhejiang Yinxinggu Capital, along with other technological enterprises and investors, have cooperated with the Cloud Town set up by the Hangzhou government (Xihu district) to establish an innovation platform to nurture technological start-ups. Via the so-called “Taofu Chengzhen Programme” (淘富成真計劃), participants are joining forces to assist makers to grow their technopreneurial businesses by integrating their R&D, product design, advanced manufacturing, testing, cloud computing, ecommerce, investment and financial resources [4].



### Hong Kong's Role as a Strategic Partner and Investor

The development of incubators has outpaced the Chinese government's planning, as investors and related institutions are taking it as one of the important venues to recruit talented technopreneurs. Although finance is among the keys to helping related start-ups become viable and scalable businesses, incubators are increasingly emphasising non-financial factors. Indeed, technopreneurships are keen to seek equity investors that are of the capacity to offer technological and commercial support. Apparently, Hong Kong is in a position to meet such demand.... ([More](#))

### Implications for Hong Kong

The huge demand from the mainland's technopreneurial ventures for financial inputs, as well as non-financial supports in areas such as technology, market connections and entrepreneurial development translates into huge opportunities for relevant technology players and investors. Financially, such technopreneurial ventures can, as mentioned, have access to various sources of funds, notwithstanding the volatile markets recently encountered by investors on the mainland. It would follow that technopreneurs and makers may not feel it necessary to come across the border merely to look for financial support in Hong Kong.

Paradoxically, many technopreneurial businesses are indeed interested in building Hong Kong connections. Many of them are particularly keen to reach out to technology partners and other professionals based in the territory. This is because Hong Kong has the capacity to assist these start-ups through opening up massive business opportunities, thanks to its excellence in areas such as system integration and application, business and marketing management, finance and other professional services. Through Hong Kong, they are often able to obtain access and exposure to technology that meets international standards, while also reaching out to markets in the territory and overseas in order to scale up their ventures in the longer term.



Many technopreneurial businesses are interested in



Hong Kong has the capacity to assist the start-ups



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through opening up massive business opportunities.

Taking the development of IoT systems and big data analytics/applications as an example, the prevailing technical standards are largely those developed by advanced countries over a decade ago. Hong Kong has developed a cluster composed of technology players and investors of both local and foreign origin who are well-versed in international technologies and standards. Hence they are in a position to enhance the innovation efforts of technopreneurs from across the border through helping them to integrate with foreign standards, and to commercialise their products or solutions in overseas markets.

With regard to the more mature technopreneurial ventures, one that have survived through “death valley”, they are often looking for further investment from venture capitalists and other private equity investors. Some of them are even within sight of the ultimate objective of listing in the stock market. Commonly their priority is to pursue public listing on the mainland, due in large part to an established record of higher valuations of certain technology-related stocks. However the volatile performance of the mainland markets has created new uncertainties for companies looking to list.

The mainland’s technopreneurial businesses may therefore look to take Hong Kong as an alternative platform to meet their financing and even ultimately their listing requirements. Moreover, investment with “foreign elements” is often preferred, as Hong Kong-based investors can help enhance businesses’ international exposure in both the financial and non-financial areas mentioned above. This is facilitated by Hong Kong’s status as the second largest private equity management centre in Asia after the Chinese mainland.

By the end of 2014, there were more than 400 firms established in Hong Kong, managing about US\$110 billion of private equity capital (accounting for about 19% of the total in Asia).[5] Many world-class international funds have set up offices here, while others are using Hong Kong as their Asia Pacific headquarters for the purposes of exploring business opportunities in Hong Kong and the mainland. Notably, technology ventures are high among the priorities of such investors. Coupled with Hong Kong’s inherent advantages, such as free flow of capital and information, sound protection of intellectual property rights and the availability of a wide range of professional services, this means the territory has a clear opportunity to cater to the service demands of the mainland’s flourishing technopreneurial culture.

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[1] For details, please see HKTDC’s Business-Alert China article "[No minimum registered capital requirement from 1 March](#)" ( 6 March 2014)

[2] The document (國家科技企業孵化器「十二五」發展規劃) was released by the MOST on 29 December 2012.

[3] The NEEQ, (also known as the “new third board”), is an over-the-counter stock market alternative to the Shenzhen and Shanghai stock exchanges. Under the approval of the State Council and regulated by the China Securities Regulatory Commission, the



NEEQ is set up specifically for the trading of the stock of small and medium-sized enterprises with sustainable business operations, including those engaging in advanced production and technological innovation.

[4] Source: Cloud Town, Hangzhou government (Xihu district)

[5] Source: Hong Kong Venture Capital and Private Equity Association

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