



**Asia-Pacific
Economic Cooperation**



Overview on the Development of Incubators in the APEC Region

— Origin, Progress and Post-2020 Vision





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Overview on the Development of Incubators in the APEC Region — Origin, Progress and Post-2020 Vision

**APEC Policy Partnership on Science, Technology
and Innovation**

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Foreword

In the 21st Century, a new generation of global technological revolution is marching towards its climax. The continuous revolutionary innovation of new technological industries, represented by information technology, bio-technology, new energy and new materials, gradually becomes the core impetus propelling the sustainable development of all economies in the world. Therefore, APEC economies have generally entered the critical stage of transformation featured by economic structure change, industrial structure upgrading and the transition from heavy chemical industries to information economy. Startup incubator, as an important means of cultivating innovative enterprises, accelerating new technical transformation and technical commercialization, develops very fast and makes indispensable contribution to the improvement of global productivity. Making use of their strong complementary nature in terms of techniques, resources and market, APEC economies, based on the guidelines of equality and mutual benefit, openness and inclusiveness, constantly strengthen their information communication and policy coordination and take substantial measures to promote the extensive cooperation on incubators.

In order to lead APEC economies to more actively participate in the incubators cooperation, Beijing International Exchange Association organized experts and scholars to redact the report entitled Overview on the Development of Incubators in the APEC Region—Origin, Progress and Post-2020 Vision, summarizing and assessing the best practices and successful experience of regional incubators cooperation and providing some recommendations on reinforcing capacity building and deepening extensive cooperation in post-2020 era.

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01

Origin of Incubator Development and Related APEC Cooperation

Since its inception in 1959, the innovative institution, thanks to the unique operative advantages, has helped a large number of new technology-oriented MSMEs to gain huge commercial success and made outstanding contribution to promoting the rapid economic growth all over the world, maintaining high-level employment and accelerating the marketization of technological achievements, attracting close attention of official, industrial and academic stake-holders. APEC, which is constantly engaged in promoting economic technology cooperation among regional economies, carries out extensive cooperation on incubators as well. Definition, functions, efficacy mechanism and development of the incubator shall be briefly introduced before summarizing and reviewing the related cooperation.

Brief Account of the Incubator

Definition

The incubator is a new form of social organization created after the third technological revolution overwhelming the world to help small and medium enterprises to develop rapidly. It has a relatively short history and it is still in continuous improvement and development. The service mission and functions of incubators in different countries are not the same due to the huge differences in their social and economic backgrounds at the early stage. Therefore, the concept of incubator has not been unanimously and accurately defined by the industrial and academic circles.

The United Nations Development Program (UNDP) defines it as a controlled industrial environment exclusively designed for cultivating new enterprises, aiming at creating conditions to train, support and develop some successful small companies and remunerative enterprises.¹ The U.S.-based International Business Innovation Association (InBIA) defines it as an assisting plan providing commercial or technological support to startups on the basis of its own professional knowledge and public resource network. It often collects monthly project fees or membership fees and provides the incubated companies with overall resources such as office (table space), telephone reception and fax, guidance of starting business, education and training, connection with external services, etc.²

According to the above elucidations, we may briefly define the incubator as:

“An economic organization, on the basis of its own social resources, providing physical space, infrastructures and supportive service to newly established small and medium enterprises to reduce undertaking risks and costs and realize national and regional economic development aims.”

Functions

Over decades of development, the service provided by the incubator has been extended from the initial simple services concerning only infrastructure and policy consultation to comprehensive services including characterized technological support and risk financing. The functions of the incubator have made a substantial leap in both width and depth.

Generally, the service functions of the incubator are demonstrated in the following aspects:

Hard Infrastructure Service. The incubator provides incubated companies with physical space for office work, R&D, conferences and production as well as hard infrastructures such as water and electricity, communication network and security guard. These services, efficiently shared among the incubated companies, largely reduced the operation cost of MSMEs by means of shared cost and, at the same time, the flexible leasing could better meet the needs of the growth and shrinkage of the companies.

Basic Intermediary Service. The incubator may provide incubated companies with a series of basic intermediary services such as commission service of commercial registration, industrial qualification, favorable financial duties qualification and consultation of government stimulating policies, explanation of administrative stipulations and instruction of law items.

Management Training Service. The entrepreneurial mentors of the incubator could provide incubated companies with advanced management training service, mainly concerning market strategies, startup process, operation management, financial management, team development, human resource management, marketing orientation, intellectual property protection, rights assertion, brand strategies, innovative culture and entrepreneurship.

Transformation of Technical Achievement Service. The incubator provides incubated companies with introduction and evaluation of new technology, mid-experiment support, product design support, advanced technology training by means of building connection platforms between incubated companies, leading industrial R&D entities (universities, professional institutions, technological laboratories of industrial leaders), venture capital

1. https://procurement-notices.undp.org/view_file.cfm?doc_id=22306.

2. InBIA, Operational Definitions : Entrepreneurship Centers , Version II, September 2017, https://inbia.org/wp-content/uploads/2016/09/Terms_4.pdf?x62369.

funds, industrial leading enterprises and medias.

Financing Support Service. The incubator, by means of product introduction and promotion exhibitions, job creation saloons and project roadshows, sets up channels for incubated companies to find investors and strategic partners in order to facilitate government assistance funds, bank loan funds, seed funds, angel funds, mid-financing or venture capital funds to provide financing support to startups to accelerate their industrialization and scale formation.

Global Resource Distribution Service. The international incubator, in order to promote further adaptation of small and medium enterprises to globalization challenge, makes full use of its own comparative advantages and provides professional service for incubated companies to optimize global resource, attract FDI and enter international market by means of establishing close interaction and resource connection with foreign central and local governments, famous industrial tycoons, international investment institutions and mature foreign incubators.

In order to provide the above incubating services, the incubator is expected to set up and maintain a series of corresponding platforms, such as platforms of technological support, investment and financing, information network, intermediary service, talent training, administrative affairs, business service and policy assistance.

Efficacy

The incubator, ever since its inception, has influenced the social and economic system deeply and its development and efficacy generation mechanism has been backed up by theories of macro-economics, micro-economics and modern management.

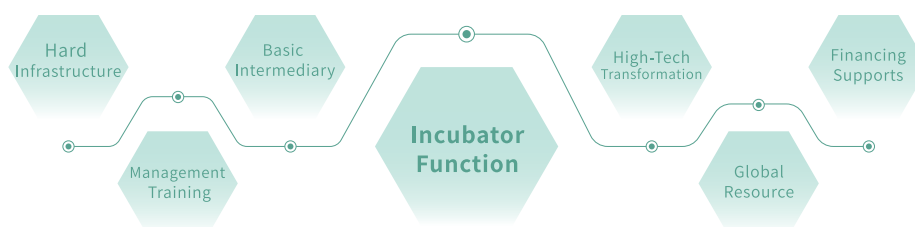
Management Efficacy. Modern management expounds

the reasons for which the incubator could improve the competitiveness and business efficiency of startups from two perspectives: the Theory of Enterprises Dynamic Capabilities and Social Network Theory.

According the Theory of Enterprises Dynamic Capabilities, to start a business refers to the process of creating innovative products and services and realizing their potential values almost without any resources. The capacities of a new company consist of two parts: technological capacity and capital capacity. For creators in possession of knowledge and technological resources, the fundamental strategy is selectively attracting and making use of the capital capacity of other institutions, with their unique original ideas as the lever, to realize the sustainable development and reasonable profits. During this process, the channels to utilize the technological and capital capacities become utterly important. Therefore, the incubator, thanks to its professional intermediary capacity, could help the startups to find and obtain the support from various resources.

According to the Social Network Theory, a social network is the total sum of intersections of different social relations (individuals or organizations). The market transaction is but a subset of the social network. A social network of high trust and inclusion of diverse relations may reduce the uncertainty in communication and information exchange, accumulate trust and prevent opportunist conducts to make sure of the cooperation and transactions of all participants. On the contrary, lack of the support of social network would lead risk-loathing people to lose all economic opportunities. Incubators with professional knowledge could establish efficiently the network and platform connecting startups and various social resources.

Scale Economy and Specialization Efficacy. The incubator provides the incubated companies with shared



infrastructures and intermediary service, which means high fixed cost and low marginal cost. The incubator may realize the scale economy by expanding its service to more MSMEs. For instance, for the property service, the biggest fixed cost lies in constructing or leasing the office building. The incubator leases the office space to a large number of incubated companies to largely share the fixed cost. The cost of time and energy needed to provide professional services is rather high for the first time, but the following marginal cost decreases and the profit increases. On the other hand, the incubated companies, with the support of various professional services provided by the incubator, may focus on developing their own core technological and knowledge advantages to obtain the benefits brought forth by the specialization.

Technology and Knowledge Spillover Efficacy. According to the Industry Cluster Theory proposed by Michael Porter, a group of aggregated and interconnected companies, suppliers and industrial associations may construct, by means of the effective market competition, an optimized aggregation lowland of specialized production factors and the knowledge spillover effect may reduce the cost of information exchange and logistics. The incubator attracts startups of the same industry with a strong sense of external effects so that an industrial cluster is formed and companies within the cluster may share the technological and knowledge spillover effect to improve the competitiveness of all the participants. In addition, the incubator gathers a large number of pioneers, which helps to form innovative culture and to cultivate entrepreneurial talents.

Major Cooperation Progress of Incubator in the APEC Region

The cooperation of incubator in the APEC region mainly conducted within two frameworks: the Industrial Science and Technology Working Group Meeting (ISTWG) and its revised entity named Policy Partnership on Science, technology and Innovation (PPSTI).

APEC Co-incubation Network

APEC Co-incubation Network, hosted by the Development Center of China Xi'an High-tech Industrial Garden and co-sponsored by the United States and Thailand, is the first cooperation project of incubator approved by ISTWG. The project is committed to actively conducting information exchange, resource sharing, technological cooperation and market development among major

incubators in the APEC region and integrating regional high-quality incubating resources in order to help Asia-Pacific MSMEs to be integrated quickly on the platform of "APEC Co-incubation Network".

On September 6-7, 2011, the "APEC Co-incubation Network" Forum was held in Xi'an, China. Representatives of about 70 incubators from 15 APEC economies participated in it and carried out in-depth discussion on topics such as "global supply chain of startup accelerator", "commercial resource network of incubated companies" and "soft service needs of incubated companies". The "APEC Co-incubation Network" was formally established.³ In September 2013 and October 2014, the host of the project called for twice "Advanced Training Workshop of APEC Co-incubation Network", covering "assistance of incubated companies financing", "market entry of incubated companies", "commercialization of high technologies", and "supply of virtual incubation service". The training adopted various flexible forms like field investigation, project inspection and venture capital connection and shared successful experience in the APEC region, improving the service quality of incubator managers as well as ameliorating the "APEC Co-incubation Network" services.⁴

The successful implementation of the "APEC Co-incubation Network" Project laid a solid foundation for future cooperation among APEC incubators.

APEC Innovation Service Chain Based on Information Technology

Since its establishment at the end of 2013, the PPSTI has been supporting all APEC economies to carry out extensive and in-depth cooperation in the field of incubators. In response to the summon, Chinese Association of Productivity Promotion Center formally implemented the "APEC Innovation Service Chain Based on Information Technology" Project in 2013. The project emphasized that the one-stop innovation service chain is composed of additional value service system and innovation service system. Therefore, it is expected to constantly expand

3.China, Forum on Co-Incubation Network Among APEC Business Incubators, 2011/SOM3/ISTWG/025, <http://mddb.apec.org>.

4.China, Advanced Training Workshops of APEC Co-Incubation network, 2013/SOM2/PPSTI/040 & 2014/PPSTI/010, <http://mddb.apec.org>.

new business information service approaches and develop different methods to extract value from property rights to efficiently integrate the innovation service chain at last. The core contents of the project include 2 international symposiums, 6 field trainings and preparation for the “Internet Service Platform of APEC Innovation Service Chain” .⁵

The “APEC Innovation Service Chain Based on Information Technology” Project effectively integrated APEC incubator resource and set up the regional innovation service chain platform, which is conducive to improving the competitiveness of high technology MSMEs.

APEC Startups Incubator Capacity Building toward Digital Society

In 2019, Beijing International Exchange Association, played a leading role in implementing the “APEC Startups Incubator Capacity Building toward Digital Society” Project. Australia, Chile, Chinese Hong Kong, South Korea, Malaysia, Mexico, Papua New Guinea, Russia and Thailand supported the implementation of the project as co-sponsors. The project is intended to review and evaluate the best practices of APEC economies concerning MSMEs incubation policies so as to put forward policy recommendations in terms of APEC startups incubator capacity building.

In September 2021, the initiator of the project plans to hold the “APEC Incubator Capacity Building Symposium” in Beijing, China. Policy-makers of APEC economies, academic research experts and incubator practitioners will be invited to carry out discussions on topics such as “incubator policy stimulation” , “incubator capacity building and pioneering ecology” , “incubator assistance for MSMEs in the digital transformation” , “role of incubator in promoting the capacity building of female entrepreneurs and managers” .⁶

This project is in close accordance with the “2016-2025 Strategic Plan” made by PPSTI. Therefore, it attracts extensive attention of all the stakeholders.

By summarizing and evaluating the above cooperation progress, it is found that APEC gradually promotes and fulfills the incubator cooperation and they have become one of the important issues of the Asia-Pacific technological innovation cooperation and MSMEs development cooperation. The gradualism is reflected in not only the expansion and deepening of the cooperation fields, but also the continuous upgrading of the cooperation goals and paths.

In the future, the importance and necessity of carrying out APEC incubator cooperation will be given more and more heed. On the one hand, APEC economies, especially the developing economies, generally regard building highly efficient incubators as an important method to promote the transformation of new technological achievements, improve the survival rate of MSMEs and keep high-level employment. The governments of the economies will continuously strengthen their support to incubators with regard to policy, knowledge, technology, funds and talents, hoping to improve as much as possible relevant industrial standards, and stimulation mechanism. These elements will attract more APEC economies to actively participate in the cooperation and make use of each other’s successful experiences. On the other hand, with the continuous deepening of the APEC economic integration, MSMEs and incubators are confronted with inevitable challenges of internationalization. APEC economies generally realize that either the coerced isolation approach of resource allocation or refusal to carry out the “regulation integration” reform would prevent themselves from making full use of the international incubation resource with prominent external effect. Therefore, they will more actively integrate themselves into the regional multilateral cooperation projects, discussions and experience sharing related to the incubators.



5. China, “Workshop on Innovation Service Chain Based on Information Technology- Overview of the Innovation Service Chain Building” , 2013/SOM3/PPSTI/004, <http://mddb.apec.org>.

6. China, “APEC Incubator Capacity Building Symposium” ,2020/SOM1/PPSTI/017, <http://mddb.apec.org>.



Progress and Best Practice of Incubators in the APEC Region

A new round of technological and industrial revolution is pushing all countries of the world into a new stage of economic development characterized by the processive transformation of production mode and industrial structure. With the emergence of new technologies, new products, new industries and new commercial models, the national prosperity depend more and more on the vitality of people's creativity.

Under this background, the incubators in the APEC region have also entered the new stage of in-depth development. On the one hand, the number and scale of incubators are fast expanding to be adapted to the huge demand of entrepreneurs; on the other hand, the requirements of high-quality incubating service lead incubators to improve themselves towards marketization, professionalization, systematization and internationalization. The incubator is transforming from an "institution" into an "industry".

In this part, the latest progress and best practices of incubators in the APEC region are summarized from five perspectives: governmental function, model of operation, source of profits, driving force and international development.

Observation I

The governmental function is transformed into creating sound incubating ecology

The government support is one of the necessary preconditions of the incubator development. For the incubators all over the world, the government plays an indispensable role in either developing or developed economies. The direct investment, subsidies, preferential tax policies the government provides are utterly important to induce the funds flow into the incubators at their initial stage.

It is worth heeding that the early government support often took the form of establishing the “government-oriented incubators”. However, this sort of incubators relies on the single investor and the official operators lack enough management experience. In addition, the direct or indirect reliance on government funds may lead to insufficient impetus of value creation and service innovation, which is not in accordance with the startups’ needs of high-quality incubating service and, in the long run, not suitable for sustainable development.

Therefore, the APEC economies realize that they should no longer be the ultimate risk takers and the governmental function should be gradually transformed into creating sound incubating ecology by giving play to its unique advantages of policy orientation, law formulation, resource allocation, intermediary service, credit creation. The following studies of the related policy paradigms aim at providing experience for APEC economies to improve governmental function and create sound incubating ecology.

China

The incubator started late in China, but developed rapidly. By the end of 2019, there had been 13,206 incubators and 658,000 incubated companies and entrepreneurial teams in China with up to 906,000 valid intellectual copyrights and 4,503,000 employees. In 2019 alone, the total revenue of Chinese incubators amounted to 65.36 billion RMB with 168,000 employees.

Chinese government provides the incubators with comprehensive support, including:

Formulating reasonable incubator development strategies and management regulations. To promote the

incubator’ s sustainable and healthy development and create sound incubating ecology, Chinese government consecutively promulgated National Medium and Long Term Science and Technology Development Planning Outline (2006-2020), National Innovation-driven Development Strategies Outline, National Technological Innovation Planning of the Thirteenth Five-year Plan (2016-2020), Small and Medium Enterprises Promotion Law of the People’ s Republic of China as well as the National Thirteenth Five-year Plan of Technological startups Incubators, making strategic arrangements for guidelines, principles, targets, key tasks and guarantee measures to promote the incubators development. Besides, Chinese government formulated and promulgated the Evaluation Index System of Technological Enterprise Incubators (tentative) (2017) and Management Regulations of Technological startups Incubators (2018), encouraging and guiding incubators to achieve their goals.

Promoting coordinated development between investment and incubating. Chinese government actively constructs the multi-level financing service system composed of incubator’ s own funds and external capitals to meet the needs of entrepreneurial enterprises at different stages. At the same time, it gradually sets up the pluralistic risk sharing mechanism made up of incubators, entrepreneurial enterprises, guaranty institutions, financing institutions and government institutions.

Promoting the regional synergy of incubators. To strengthen the incubators’ cooperation between different regions, Chinese government is building the synergistic incubating network in the region of Beijing, Tianjin and Hebei Province, Yangtze Economic Belt, Zhujiang Delta, Chengdu-Chongqing economic zone. At the same time, it encourages to establish regional incubator union to promote the experience sharing between the incubators in specific region in order to reinforce the supplementary cooperation.

Japan

The incubator started early in Japan. Inspired by the Silicon Valley, Japan began to transform the strategy from “trade-oriented” into “technology-oriented” since 1960s and it spared no efforts to comprehensively support high-tech innovation in terms of policy, national plan and finance. The Scientific Town of Tsukuba, Japan’ s most representative incubator, started in 1968 and totally consumed over 5 billion US dollars.

Japanese government provides the incubators with comprehensive support, including:

Building incubating bases directly. Many of the Japanese incubators are built and operated by central or local governments. As for the Scientific Town of Tsukuba, the planning, approval, site selection and construction all depend on government administrative instruction, and even academic institutions and related researchers are transferred from Tokyo.¹In addition, its infrastructures and research equipment have to go through administrative ratification and all kinds of research institutions, educational facilities and incubating activities must be vertically guided by corresponding departments in Tokyo.

Proving sound legal protection. Japanese government provides incubators with sound legal protection and a number of preferential policies, which can be generally divided into two categories: laws exclusively erected for incubators and social, technological and economic regulations relevant to incubating activities. The first one is more concentrated and forceful. For instance, the Urban Construction Law of the Scientific Town of Tsukuba clarifies its construction plan, development and integration of the surrounding land and property facilities; the Research and Communication Promotion Law allows private enterprises to use the facilities of national research institutions; the Implementation Decree specifically stipulates the use of the incubating infrastructures.

Establishing technological exchange platforms between research institutions and startups. The smooth technological exchange platforms between research institutions and startups is utterly important for product improvement and industrialization of entrepreneurial enterprises. However, it is difficult for this kind of platforms to realize the break even. Therefore, Japanese government always offers substantial support at the initial stage. For example, the government fully funded the “Tsukuba Research Supporting Center” to promote the transformation of technology achievement and sustainable technological innovation.

1.In 1974, Japanese government began to transfer its 43 academic institutions, totally over 60,000 researchers to the Scientific Town of Tsukuba, forming a high-level incubator center with national laboratories and Tsukuba University as its core.

South Korea

In 1993, the South Korean Ministry of Commercial and Industrial Resources (now renamed as Ministry of Industrial Business Resources) put forward the “Incubating Plan” for the first time. The core content of the plan is that the Korean Institute of Science and Technologies (KIST) helps four universities to create the incubators and promote successful experience to the whole country. Since 1995, some local governments of South Korea started establishing their won regional incubators.

South Korean government provides the incubators with comprehensive support, including:

Formulating encouraging policies and regulations. In order to set up “Research Zone of Industrials and Academics” and “Regional Development Supporting Team” centering on 4-year universities, 2-year institutes and other research institutions, South Korean government consecutively promulgated and implemented Special Law of Cultivating Risky Enterprises, Special Act to Support High-tech and Knowledge Intensive Enterprises, Law on Establishment, Operation and Cultivation of Government Funded Research Institutions, etc.

Providing Subsidies directly. South Korean government provides every “acknowledged incubator” with a certain sum of extra subsidies to improve its service capacity, which is utterly important for initial incubator to realize the break even, attract high-quality management talents and improve their incubating service quality. Therefore, the rentals of government funded incubators are much lower than the market price and it is easier for entrepreneurial team to obtain the latest technological achievements and rich human resources.

Adjusting the industrial structure actively. At present, there is a certain structural imbalance in the South Korean incubating industry. For example, the small incubators with only 10-19 incubated companies account for 63.5% of all incubators and over 80% of them are initiated by universities. To solve these problems, South Korean government adopted preferential fiscal policy and financial subsidy to support the acquisitions of small incubators into medium/large incubators, while keeping the features of effective cooperation among incubated enterprises. The government encourages the incubators operated by universities to get rid of their former administration system through property reorganization, and provides private incubators with support of professional skills, information and financial resources to improve their operational performance.

Observation II

Adopting More Efficient Market Operation Mode

In order to get rid of the inefficiency of the government-oriented mode, the incubators must be marketized to be responsible for its own profits and losses, and provide well-directed incubating service in subdivided industries. Only in this way could it give full play to its advantage and realize sustainable development.

The incubator's central mission is to help entrepreneurial enterprises to cope with the ever-changing external challenges. In no way could incubators in lack of entrepreneurship provide valuable support to startups. Therefore, the core of marketization of incubator is to fully get rid of the government administration and set up modern enterprise system of clear propriety, definite rights and responsibilities, and scientific management. Operational work should be undertaken by experienced professional managers.

With the emerging industries developing towards more and more specialization, only professional incubators could provide special entrepreneurial team with customized service and help them to strengthen their core competitiveness. However, professionalized development does not mean that incubators could only serve emerging industries, but they should also pay close attention to the high-tech transformation of those traditional industries.

The following studied are committed to providing experience for APEC incubators to develop towards more efficient marketization.

Chonnam National University Business Incubation Center (CNUBIC) is a non-profitable incubator initiated by South Korean government and affiliated to Chonnam National University. It integrates university, government and entrepreneurial enterprises into a highly efficient incubating system and provides incubated companies with error-correction chances by means of "startups nursery system" to minimize their losses.

Quebec Biotechnology Innovation Center (QBIC) is the best incubator of Canada's bioscience and health technology industry, providing startups with unique incubating services. The shared high-grade biological security laboratories and advanced technological instruments greatly reduced the operating costs of the incubated enterprises.

The Incubator for Agribusiness and Agroindustry at Bogor Agricultural University (IAA-IPB) focuses on Indonesian agricultural startups as well as development of agricultural technologies, emphasizing keeping one-to-one interaction with incubated enterprises and providing specialized solutions. The support from external strategic partners is another important guaranty of its success.

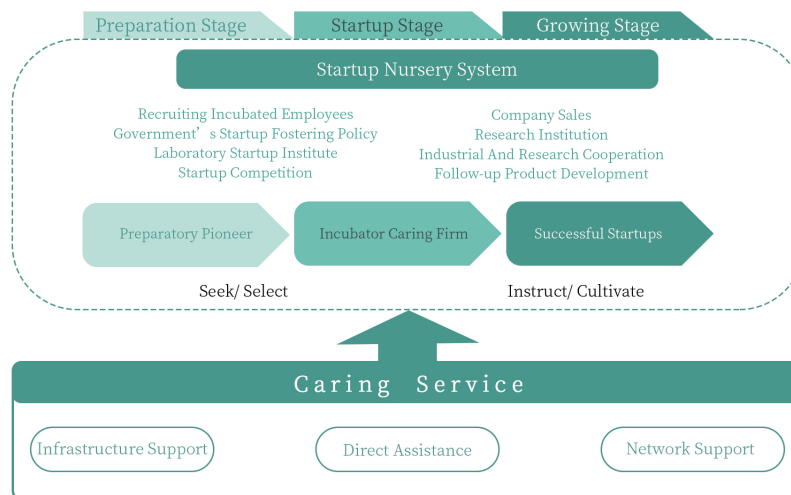
The Centre for Business Incubation and Entrepreneurial Ventures (CBIEV), as a resource center for Tunku Abdul Rahman University College Community and public, steers the development and direction of the innovation, incubation and entrepreneurial initiatives in Malaysia. It capitalizes on the ability of entrepreneurial enterprises to turn innovative concepts into scalable and sustainable businesses. CBIEV emphasizes to establish the incubating platform on the basis of ecosystem concept and to assists entrepreneurial enterprises to realize commercialization through a one-stop center.

Chonnam National University Business Incubation Center

Chonnam National University Business Incubation Center (CNUBIC), put into operation in 1999, is a non-profitable incubator initiated by South Korean government and affiliated to Chonnam National University and enjoys the legal status of a public entity. Over two decades of operation, it has accumulated management and operation experience with distinct South Korean characteristics and gained a big success. In 2015, it was honored by the Asian Association of Business Incubation (AABI) as the best annual incubator.² According to relevant data, CNUBIC incubated up to 104 entrepreneurial enterprises from 2012 to 2014 with a total volume of 46.8 million dollars and 52 new patents. Altogether over 4 million dollars were invested in R&D.³ CNUBIC not only stimulated the rapid growth of local economy, but also promoted the development of emerging technologies.

2.AABI Incubator Award, <http://www.aabi.info/incubato-award.html>.

3.Chonnam National University Business Incubation Center, https://global.jnu.ac.kr/Academics/Special/Sp_Industry.



CNUBIC' s Startup Caring System

Approach to Incubation

CNUBIC has integrated university, government and entrepreneurial enterprises into a highly efficient incubating system wherein experts from Chonnam University are responsible for CNUBIC' s normal training activities; the board of directors of Chonnam University and its CEO are responsible for other basic incubating service; and government officials are responsible for explicating relevant policies.

In addition, in order to increase the success rate of every incubating project, CNUBIC has also constructed the "startups nursery system" , providing comprehensive guaranty service in terms of infrastructure, direct technology assistance and service network, including not only the market feasibility analysis and business proposal preparation in the stage of pre-incubation, but also the support on R&D, financing and market expansion during the incubating period.

Key Lessons

CNUBIC does not have enough funds to fully sponsor the incubated enterprises, but it carries out close cooperation with South Korean Small and Medium Enterprises Management Bureau, venture capital institutions and commercial banks, with whose support it gives indirect financial assistance to the startups.

In addition, CNUBIC relies on rich academic and research resources to provide startups with comprehensive training. By means of "startups nursery system" ,

CNUBIC provide entrepreneurial team with error-correction chances to minimize their losses.

At last, in order to increase the success rate of the incubated enterprises, CNUBIC constructs a complete incubating system from industrial policies to sample design in cooperation with Chonnam University holding company, Technology Certification Center, Startups Education Center, Innovation Policy Center and Micro-assembly Laboratory.

Quebec Biotechnology Innovation Center

Quebec Biotechnology Innovation Center (QBIC) is a bioscience incubator providing the incubated companies with laboratories, offices and high-grade technological instruments. As Canada' s best incubator in terms of emerging bioscience and health technology industry, QBIC, through 25 years of operation, has become a paradigm of incubators in this domain. By far, over 50 startups, attracted by its experienced mentor team, have chosen QBIC as their incubator, such as famous enterprises of GlaYCovax Phama, inixium, inbitrozyme inc., oligo medic and graduated enterprises include NMX Research and Solutions, etc. ⁴

4. Quebec Biotechnology Innovation Center, Innovations in Comfort, Efficiency, and Safety Solutions, <http://www.automatedbuildings.com/news/jul06/articles/distech/060628041404distech.htm>.

Approach to Incubation

QBIC provides startups with all-round incubating services in the stage of pre-incubation and incubation. Any new customers may immediately obtain the verification support for their technical scheme and business proposal from expert teams to minimize the potential risk. Although the incubated enterprises need to go through strict evaluation to their viability, it could be much easier for them to obtain the support from venture capital institutions in future.

QBIC provides the following incubating services:

Space Leasing. Incubated enterprises have an access to complete second-grade bio-security laboratories equipped with ventilation installation, II-type anti-osmosis pure-water system, natural gas, nitrogen, central vacuum system, emergency power supply and complete ventilation system. In addition, secure management services regarding bio-medical science, chemistry and radioactive waste are provided.

Equipment and Instrument Sharing. Incubated enterprises may have free access to many scientific instruments such as sequence test, oligonucleotide synthesis, mass spectrum, flow cytometer, electronic telescope, animal test, etc.

Bioscience Technology Consulting. The “Enterprise Guiding Plan” jointly executed by QBIC and Laval Economic Development Bureau may help startups obtain the optimal human resource and funding support. In addition, QBIC technological team may help incubated enterprise design, construct and operate high-grade laboratories and enable them to fast organize research activities.

Key Lessons

The greatest success of QBIC lies in its constant focus on startups committed to emerging bioscience and health technology industry and provision of professionalized services such as bio-security laboratory and advanced instruments that can never be available elsewhere, which greatly reduced operating costs of incubated enterprises.

The Incubator for Agribusiness and Agroindustry at Bogor Agricultural University

The Incubator for Agribusiness and Agroindustry at Bogor Agricultural University (IAA-IPB) originated from the pilot institution co-founded by Bogor Agricultural University and four other institutions in 1994 and focusing on agricultural startups and agricultural technological development. Later it developed into a formal incubator charged by IPB research and development institution. In the 1990s, the Ministry of national education of Indonesia (MNE) actively promoted the establishment of incubators in all universities. IAA-IPB was nominated as assessment coordinator, evaluating new incubators proposal and supervising their implementation. In 2011, IAA-IPB moved to Darmaga Campus near Bogor, including shared food factories, pilot workshops and product laboratories as well as a lot of government-funded new equipment with 14 incubated enterprises.⁵

Approach to Incubation

IAA-IPB provides different services in various incubating stages: in the early stage, it provides innovation guidance, market evaluation and technology outsourcing consultation; in the incubating stage, it provides incubating service related to yielding the specific product; and in the termination stage, it provides incubating services such as business proposal modification, refinancing of new products and development of new sales market.

IAA-IPB provides the incubated enterprises with the following specific services: office space and public facilities with reasonable rental; free conference room, training room and other office facilities; free consultation on technology development, management upgrading and market expansion; free human resource training, commercial meeting and symposium; free communication services with processing factories and laboratories; free business proposal modification; free facilitating services on credit extension, such as low-interest loans from the government; international exhibition service according to the needs of incubated enterprises.

⁵Gioletti, Francesco 2011 Background Case Study for Incubator for Agribusiness and Agroindustry at the Bogor Agricultural University (IAA-IPB, 2011), a study conducted by Agrifood Consulting International (ACI) and Economic Transformation Group (ETG) for infoDev, Bethesda, MD 2011.

In the early stage of comprehensive agribusiness development, IAA-IPB has been following the principle of prudent charge, only charging standardized fees for physical space and public facilities, charging low fees or free for consultation service and charging laboratory analysis according to actual services.

Now IAA-IPB has expanded its business beyond agriculture, attracting as well MSMEs committed to artifact, leather and IT to join.

Key Lessons

Two inspirations can be acquired from summarizing IAA-IPB's successful experience:

First of all, in the process of incubating, the incubator must attach great importance to the actual needs of the incubated enterprises and help them to develop rapidly. The success of the incubated enterprises is a prerequisite of the sustainable development of the incubator. Therefore, the one-to-one interaction with the entrepreneurial enterprises is fundamental to understand their special needs and to offer solutions.

Secondly, the incubating service needs to bring in external resource from strategic partners. As far as IAA-IPB is concerned, it gets support from infrastructures, communication equipment and technology consultations by means of cooperation with Bogor University; it helps the incubated enterprises to obtain credit loans by means of the implementation of national preferential policies supporting MSMEs; it makes startups acquire international experience by means of developing a network of international partners; and it meets the financial needs of startups by means of establishing venture capital platform in cooperation with commercial chambers and financial institutions.

The Centre for Business Incubation and Entrepreneurial Ventures

The Centre for Business Incubation and Entrepreneurial Ventures (CBIEV) is set up specifically to steer the development and direction of the innovation, incubation and entrepreneurial initiatives at Tunku Abdul Rahman University College (TAR UC) in Malaysia. As the resource center for TAR UC Community (students, staff, and alumni) and public who are interested in entrepreneurship and innovation, CBIEV capitalizes on the ability of entrepreneurial enterprises to turn innovative concepts into scalable and sustainable businesses.

Approach to Incubation

As the flagship program of CBIEV, the i-Spark Incubation Center was officially launched on 23 November 2017 as a platform for TAR UC students and public to talk about their business ideas and to engage with successful entrepreneurs for funding.

The i-Spark Incubation Center was established based on the ecosystem concept, whereby the ecosystem partners are strategically sourced to provide core services for startups. The i-Spark partners include: Business Support Partners, Funding Partners, Resource Partners, Government / NGOs / Associations, Mentors / Trainers, Alumni Group, Venture Capital Investors. Through its unique i-Spark Ideation Sessions and entrepreneurship educational webinar series, students will be able to receive feedback from the alumni and successful industry players to further improve their ideas until they are ready to pitch to potential sponsors and investors. The learning objectives of entrepreneurship educational webinar series include: fundamentals of growing business, applying innovative thinking for sustainability, tasks management and delegation, learning the traits of growth mindset, building adaptability and resilience behavior, managing expectation vs. reality, managing business cashflow and paying yourself, developing income buckets, managing and forecasting revenues, building assets and wealth portfolio, understanding the entrepreneurship journey timeline and milestones, identifying various roles and management, time management and business goal settings, capturing unique factors and inner essence, identifying the gap in personal brand that hinders success, building action plans to align personal brand for the business.

Key Lessons

The successful experience of CBIEV can be summarized in the following aspects:

First of all, to establish the incubating platform on the basis of ecosystem concept, whereby the ecosystem partners are strategically sourced to provide core services for the startups. The CBIEV's i-Spark ecosystem includes: Registration and Screening, Mentoring and Coaching, Development and Prototype Funding, Ideation and Pitching, Business Funding and investment, and Business Start-Up.

Secondly, to assist entrepreneurial enterprises to develop their business ideas to commercialization through a one-stop center that promote innovation.

Observation III

Introducing Multichannel Incubation Capitals

Sufficient fund is always the biggest challenge confronting MSMEs at their initial development stage as well as the support they crave for most from the incubator. In addition, the sustainable development of the incubator itself depends on the stable source of remuneration. Therefore, the APEC incubators gradually gave up the thorough reliance on the infusion of government funds and began to introduce Multichannel Incubation Capitals to promote the coordinated development between incubated enterprises and incubators.

The first approach is that the incubator sets up seed funds, holds shares of the incubated enterprise and quits with remuneration when those enterprises are successfully listed or merged. This approach integrates the incubator and the startups as stakeholders of mutual benefits. The second approach is that the incubator cooperates with external venture capital institutions to establish an efficient financial platform. The third approach is that the incubator actively helps the startups to get social capitals from the commercial banks by establishing a special guaranty mechanism or cooperating with guarantor enterprise and social credit evaluation institutions.

The following studies in this part aim at providing experience for APEC incubators to introduce multichannel incubation capitals, including:

Y Combinator, as one of the exemplary incubators of the world, has cumulatively incubated over 2000 enterprises with estimated value of over 300 billion dollars. It incubated many unicorn enterprises such as Stripe and Airbnb. Its successful experience of providing entrepreneurial teams with angel investment and training camp services is studied and practiced by incubators all around the world.

Red Dot Ventures provides flexible financing services to the startups with the strong support from Singaporean government, including independent investment or co-founded seed funds in cooperation with governmental departments or other venture capital institutions, to carry out multichannel financing service.

Nizhny Novgorod Innovative Business Incubator (NIBI), one of the most typical and successful business incubators in Russian Federation, bends its efforts for bringing

innovative products to the market and creating favorable conditions for the development of entrepreneurial enterprises. Its basic strategies are to implement the "one-stop-shop" incubating services for the incubated enterprises, and to provide the incubated enterprises with venture capital funds from Russian and foreign investors for the implementation of innovative projects.

Y Combinator

Y Combinator (YC) was founded by Paul Graham in the Silicon Valley in 2005. As a famous "enterprise-creating" incubator, YC built powerful brand influence and became a model of global incubators, based on its strong tutoring capacity and constant successful cases. It topped the list of "top 10 American incubators and accelerators" of Forbes in 2012. According to the latest data from its official website, it has by far incubated over 2000 enterprises with a total value of over 300 billion dollars, creating over 60,000 employment opportunities, wherein over 125 graduated enterprises' market-estimated value has surpassed 150 million dollars, including many unicorn enterprises such as Stripe, Airbnb, DoorDash and Coinbase.⁶

Approach to Incubation

YC incubating model is quite typical – providing entrepreneurial teams with angel investment and training camp services in exchange of a certain proportion of their stock right. And it will quit and get remuneration when the startups are listed or merged by other enterprises.

YC selects entrepreneurial teams to participate in the "training camp" (twice every year) by means of online application and offline ratification, and then provide seed funds in those selected. YC often invests 125,000 dollars in exchange of about 7% of the startup' shares and the payment will be made in two installments. The entrepreneurial team cannot obtain the second sum of corresponding investment until it gets the next round venture capital.

During the three-month "training camp", YC will provide the startups with comprehensive incubating services including training, investment promotion, and marketing. The most interesting part is the Demo Day composed of "office hour" and "dinner party".

6.YC Top Companies, <https://www.ycombinator.com/topcompanies>.

During the “office hour” , the entrepreneurial enterprises may consult the YC mentor team about the problems of operating and development. About 10% of the conversation is made sure to focus on the vision of the startup instead of details, which leads some entrepreneurial enterprises reformulate their strategic orientation.

YC also encourages the entrepreneurial enterprises to regard the weekly “dinner party” a mini-Demo Day to present their progress during the week. On occasion of the “dinner party” , YC invites some experts to deliver speeches, including entrepreneurs, venture capital managers, lawyers, accountants, journalists, top bankers and senior managers of technological companies. The powerful alumni network may offer valuable suggestions, even direct investment to the entrepreneurial enterprises.

However, the Demo Day is not the end of YC incubating service. Afterwards, it will cooperate with world-famous investors from Sequoia Capital, Andreessen Horowitz, SV Angel, Initialia Capital, etc. to input more venture capital in the startups.

Key Lessons

The successful experience of YC operational model and financing services is studied and simulated by incubators all over the world. First of all, YC heeds only the earliest entrepreneurial teams and provides each one of them with small-sum seed fund via “batch processing” . As the current technology innovation is full of uncertainty and unpredictability, the “selected cultivation” model lets YC not only stably dissipate investment risk, but also establish closer relationship with those MSMEs mastering disruptive technologies in the future.

In addition, by means of the regular Demo Day in the training camp, YC consolidates the cooperation between entrepreneurial enterprises and investors, allowing angel investors to obtain high-quality projects and providing entrepreneurial enterprises financing support as early as possible.

Red Dot Ventures

Red Dot Ventures (RDV) is a Singaporean incubator exclusively providing support for technological entrepreneurial teams in the stage of seed and pre-seed to develop rapidly. With the help of RDV’ s professional mentors, over 500 enterprises have been incubated with an estimated market value of over 450 million Singapore

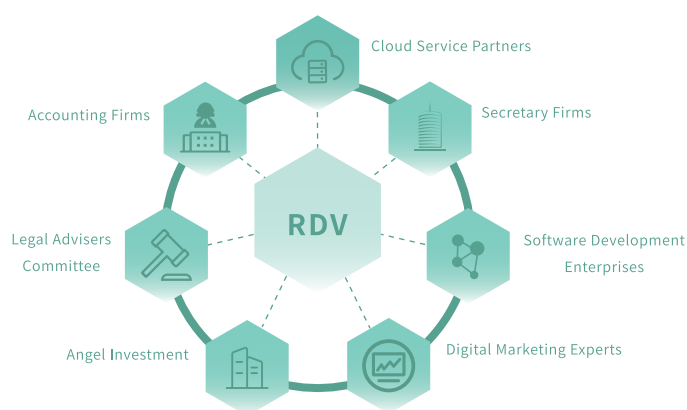
dollars, wherein 43% obtained constant financing support from other venture capital institutions.⁷

Approach to Incubation

RDV provides the startups with flexible incubating services in different stages.

In seed stage, RDV makes sure that the incubated companies could enjoy comprehensive mentoring training, technological expert consultation, potential business partnership development and the most important venture capital financing, even the publicity and exposure to media like Channel News Asia to increase the probability of their success. RDV pays close attention to the following industries: ICT, Internet of things, big data, artificial intelligence, clean energy technology, alternative energy solutions, medical technology as well as advanced medical solutions, financial technology, educational technology, advanced industrial materials and manufacturing.

In pre-seed stage, RDV resorts to “Intensive startup Builder Program” to provide the startups with basic incubating services such as property leasing, internet infrastructure, business agency, cash investment, enterprise operation guidance, etc. The program is completely pragmatic. The startups may access to all resources in RDV’ s service network and accept the one-to-one service from angel investment, professional merging capital, legal advisers committee, accounting firm, secretary firm, digital marketing experts, software development enterprises and cloud service partners.



Red Dot Ventures Incubation Service Network

⁷What is Red Dot Ventures, <http://www.reddotventures.com>.

Key Lessons

The most important factor of RDV success is that it is not only a venture capital institution, but also a “startup” for incubating other entrepreneurial enterprises. Most members of RDV core management team are ambitious and efficient entrepreneurs.

In addition, the financing services RDV provides for the startups is very flexible. RDV may not only act as the unique funder in possession of a certain proportion of the startups’ stock rights, but also cooperate with government institutions to carry out risk investment, and it may even set up co-founded “seed funds” with other venture capital institutions to jointly provide financing services. The flexible financing model may yield win-win effect more easily and utilize greater complementary effect of various funding channels.

Nizhny Novgorod Innovative Business Incubator

Nizhny Novgorod Innovative Business Incubator (NIBI), created in 2011 by joint efforts of the Russian Federation and Nizhny Novgorod local governments, bends its efforts for bringing innovative products to the market and creating favorable conditions for the development of entrepreneurial enterprises. It implements unique incubation program, which is intended for companies working in the field of high technologies that are at the seed stage, when the business idea and the core of the project team are already there, the research results are confirmed, patenting and a prototype are under preparation, but the entrepreneurial team needs assistance in attracting the missing intellectual, financial and technical resources. In 2016, NIBI was recognized as the best business incubator in Russia within the Young Lions National Award. By now, NIBI specializes in ICT, instrument making, mechanical engineering, electronic engineering, and biomedical technologies, as well as the development of new materials.

Approach to Incubation

NIBI annually supports about 2,000 projects at various stages of development. Participants of the two-year pre-seed program “Umnik” can receive 500,000 rubles each. The three-year program “Start” offers its participants 2 million rubles in the first year. One can receive up to 15 million rubles under the “Commercialization” and “Internationalization” programs, 20 million under the “Development-NTI” program. The largest funding is in

the “Cooperation” program. It can provide financial support of up to 25 million rubles.

The incubation development process of NIBI is divided into two stages :

Pre-incubation program (2 months). The objective is to formulate a business idea and to represent it in detail. Package of services include: assistance in drafting a business plan; drawing up an operational and financial plan for the project; legal advice on company registration and other consulting services; providing information on potential sources of finance; assistance in team building and recruitment; preparation of the project presentation.

Incubation program (36 months). The objectives are to create a functioning business, to attract finance for the project, to organize the interaction with potential customers and partners. Package of services include: leasing out an equipped office on preferential terms; face-to-face work with the project coordinator; teaching the basics of entrepreneurship to company employees; free legal support for the company or on preferential terms; accounting services; project promotion services; assistance in finding investors.

Key Lessons

The successful experience of NIBI can be summarized in three aspects:

First of all, its goal concentrates on creating functioning businesses from business plan to market entry, to raise funding for the projects, and to organize the interaction with potential customers and partners;

Secondly, its basic business strategy is to implement the “one-stop-shop” principle for the incubated enterprises, which essence is to assist in solving all issues and problems arising from residents, ranging from the selection and survey of premises to the current activities and extra options, providing the widest possible range of services for running the business;

Thirdly, it provides more opportunities for the incubated enterprises with venture capital funds from Russian and foreign investors for the implementation of innovative projects, and participates in the negotiations between the startups and the investor.

Observation IV

Industrial Pioneering Enterprises Forge Incubation Group

With the increasing demand on the precision and mutual benefit of the incubating service, some pioneering enterprises of high-tech industries, centering on their own industrial chain and starting from internal projects' incubation, jointly forged the incubation group with professional incubating institutions, government departments, venture capital funds, non-profit research institutions, universities and intermediary service companies. The incubation group is conducive to fully releasing and coordinating various resources, which not only accelerate the commercialization of the startups, but also contribute to the promotion of the industrial innovation chain.

As a revolutionary incubating model, the incubation group is of vital importance for the mutual benefit between the industrial pioneering enterprises and the startups. For pioneering enterprises, although the incubation may possibly make some startups grow into potential competitors, yet the experienced senior managers realize that the interaction is more conducive for them to quickly identify the disruptive technologies that have already appeared or will soon appear in the market, so that they could take appropriate actions to transform the technologies into new products, new service and new industries and bring continuous vitality to their own enterprises. In addition, by means of cooperation with university researchers carrying out more extensive researches and startups, the pioneering enterprises do not have to keep a large scale of R&D groups while focusing on their most advantageous technological domains, thus the cost and risk of fundamental scientific research are dissipated.

For the startups, participation in the incubation group could make them better use of rare resource provided by the pioneering enterprises such as advanced industrial technology, high-grade research platform, connection with global value chain, brand influence, client channels and technology exchange with peer enterprises. In addition, they may acquire technological guidance from senior managers and employees of giant enterprises, with the opportunity to enjoy the intellectual support from top talents, which would largely lower the threshold for them to enter the industry and increase their survival probability.

The following studies in this part aim at providing experience for APEC incubators to advance toward more systematic development, including:

AT&T Foundry, the incubation group founded by AT&T has set up many innovation centers all over the world and it actively provides the startups with free technological guidance and assists them to be integrated into the telecommunication innovation chain.

Hai Chuang Hui(HCH) is a mutually beneficial incubating ecology built by Haier Group, a traditional Chinese producer of electric appliances. Based on Haier Group's R&D platform and Industrial Internet Platform, it provides the startups with comprehensive industrial resource to realize the coordination effect of the industrial innovation ecological system.

AT&T Foundry

America Telephone & Telegram is the largest landline and mobile phone service supplier in the United States. In 2011, in order to encourage MSMEs in communication industry to actively carry out forward-looking technological innovation, AT&T established the incubation group --AT&T Foundry, and set up 5 innovation centers respectively in California, Texas, Georgia and Tel Aviv, Israel. AT&T Foundry is committed to creating a fast-rhythm coordinated environment where all participants could give full play to their advantages and promote the development of communication industrial chain in a thoroughly opening manner.

Approach to Incubation

In the innovation centers of AT&T Foundry, new technology innovators can not only share basic office space and network, but also work shoulder-to-shoulder with AT&T's senior technical teams and accept the technological support and full-time mentoring service which are not available elsewhere in the world, which makes it possible for them to offer innovative applications, products and services to the market at a higher speed.

However, for many entrepreneurial enterprises, the most attractive part of this incubation group is that AT&T Foundry, relying on its own predominant status in the communication industry, makes it convenient for the startups to obtain the upstream and downstream resource of the industrial chain. Different from other mainstream incubators, AT&T Foundry does not offer incubating fund or financing services, nor does it seek to hold shares of the startups. The graduated startups may

become AT&T' s independent partners, or be merged into AT&T' s own business system, or even be permitted to offer services to AT&T' s competitors.

Key Lessons

AT&T Foundry is the cultivation base of AT&T' s future technological partners. The incubator operates on the "non-profit model" , providing the startups with free office space, network, mentoring service and industrial chain resource and seeking neither financial profit nor monopoly of new technology by means of stock ownership. However, AT&T Foundry' s main objects are the future partners that may help AT&T to cope with the challenge on technological innovation, business realization and users' experience upgrading. Manager of AT&T Foundry could report directly to AT&T' s chief technological officer and, like AT&T Laboratory, those partners are expected to provide strategic support to AT&T' s overall technological innovation system.

Hai Chuang Hui

Founded in May, 2014, Hai Chuang Hui (HCH) is Haier Group' s successful transformation from a household electric appliances manufacturer to an incubator. It focuses on industries such as Internet of Things, TMT (telecommunications, media and technology) and Big Health. It has established 28 incubators in 12 cities around China as well as 11 other countries, incubating over 4,000 incubation projects with a total estimated value of 80 billion RMB. By far, HCH has successfully incubated 2 listed companies, 5 unicorn enterprises and 22 gazelle projects.⁸

Approach to Incubation

HCH integrates the industrial resource of Haier Ecological Circle and global public resource and provides the startups with comprehensive incubating service.

Basic Incubating Service: acceleration camp, which provides office space, startup lessons, mentoring services and alumni network; cross-border incubation, which connects incubation projects with overseas industrial resource; financial adviser, which formulates financing strategies for the startups.

Financing Service: self-owned seed fund, which includes "HCH fund" , "sea-star seed fund" ; external financing fund, which provides venture capital institutions and entrepreneurial enterprises with financing integration service.

Industrial Chain Accessing Service: R&D, which provides accessing into Haier Group' s HOPE R&D platform and global technological resource connection; industrial design, which provides efficient industrial design support in cooperation with industrial design institutions such as Chinese Academy of Sciences and Shenzhen Institute for Innovation Design; manufacturing, which provides large-scale customized solutions by means of Haier Group' s COSMO Plat; market sales, which provides marketing channels in cooperation with "Haier Community Store" , "Haier Boutique" and "Haier Leisure Mini-store" ; logistic transportation, which provides logistic distribution and storage service in cooperation with "Haier Ririshun Logistics" ; post-sale service, which provides all-channel calling center construction service in cooperation with "Haier Ririshun Lexin" .

Public Resource Sharing Service: providing business consultation service in cooperation with HFH and HQT; providing financial and fiscal service in cooperation with Kingdee; providing enterprise credit data service in cooperation with Vanlinks; providing cloud calculation service in cooperation with Huawei Cloud and Baidu Cloud.

Community Expansion Service: initiating "Banyan Plan" and opening Haier industrial resource to other incubators; organizing Entrepreneurship Competition, round-table forums and Road-Shows to improve the startups' brand influence.

Key Lessons

HCH is one of the most successful incubator groups established by China' s industrial pioneering enterprise. Its core value is to grow together with the incubated enterprises and establish the win-win ecological circle. Making full use of Haier Group' s industrial resource which is accumulated for nearly 40 years, relying on the established HOPE R&D platform and COSMO Plat industrial internet platform, HCH provides the incubated enterprises with comprehensive resource from infrastructure service to community expansion service to realize coordination effect of the industrial innovation ecological circle.

8.HCH, Accelerator platform of global startups, <http://www.ihaiier.com>.

Observation V

Incubators Accelerate Their Pace of Internationalization

With the rapid development of Asia-Pacific regional economic integration, MSMEs in this region are increasingly integrated into global and regional value chains and there are increasing needs of international technology transfer, overseas market expansion and cross-border capital allocation. However, owing to serious deficiency in information resource, funding support, risk resistance capability and management experience, it is difficult for the startups to realize internationalization by their own means.

International incubators boasting the ability to integrate international resource provide the startups with new opportunities. For instance, by means of their accumulated relations with international governments, they could assist the startups to better understand and use the domestic preferential policies; to help the startups connect with local industrial associations by means of their established strategic partnership with overseas incubators; to provide the startups with training about overseas laws and regulations by means of their own international talent reserves and mentors; to share international market information between the startups and graduated enterprises by means of their internal information communication platforms.

The following studies in this part aim at providing experience for APEC incubators to develop toward more profound internationalization, including:

500 Startups, as a paradigm of international incubators, has successfully incubated a large number of international projects with satisfactory profit returns and built an international network of incubating mentors of pluralistic cultural and knowledge backgrounds as well as global incubation projects screening network based on the partner' recommendation.

Global Market Accelerator Program, relying on the affluent incubator resources of Australia Latrobe University, has creatively introduced the international students working group on market investigation and effectively solved the problem of information dissymmetry in the international market. In addition, by means of locking up a series of extremely influential strategic partners all over the world, GMAP improved specialization of incubating service, enriched international development experience and established international mentor network.

Start-up Chile, aiming at transforming Chile into a global pivot of technology innovation, deliberately forges the most vivacious and pluralistic incubation platform of the world and actively attracts high-tech startups with international perspective to enjoy the related preferential policies. The efficient application of the tactics such as Global Partnership Network and "SUP Detecting" increases the adherence between the startups and the hosting country' s market to facilitate their rapid growth all over the world.

500 Startups

Founded in 2010, 500 Startups is a top accelerator in the Silicon Valley of California, the United States, as famous as Y Combinator and TechStars. Dave McClure, its founder, has 20-year working experience in the Silicon Valley, as he has worked for many famous enterprises such as Microsoft, Intel, PayPal, and Founder' s Fund. In 2019, it was nominated as the most active global venture capital company of the year by VC Deal Count. In 2020, it was again nominated as the second most active global venture capital institution.⁹

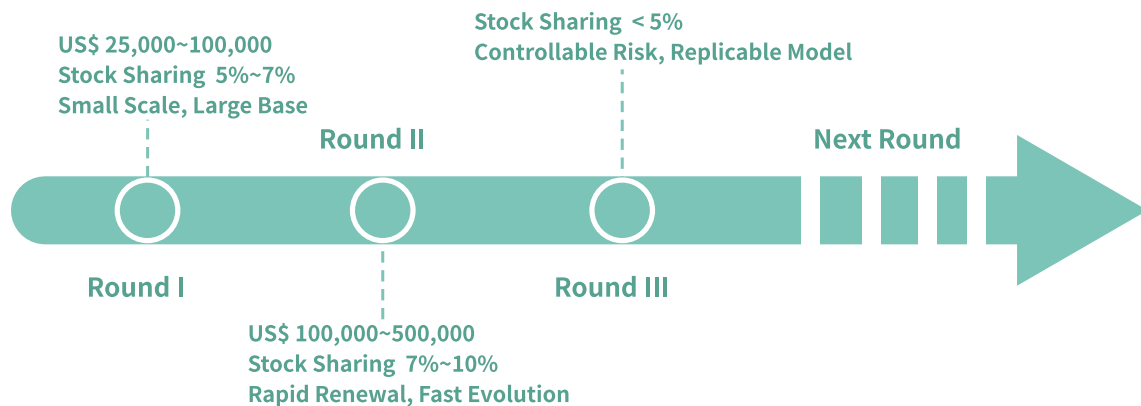
Approach to Incubation

As its business mission, 500 Startups is engaged in vitalizing global economy and promoting human development by forwarding the entrepreneurial spirit.

500 Startups is an incubator of outstanding global strategies and over one third of its projects are from countries or regions other than the United States. Every year, it selects global projects and carries out concentrated incubation in the Silicon Valley in batches, each of which lasts 3 to 4 months. In addition, it provides mentors from different cultural and knowledge backgrounds, characteristic saloons and promotions to support the startups from different countries. By far, it has offered incubating service to about 5,000 entrepreneurs of over 2,400 enterprises from 75 countries. These enterprises created thousands of jobs and served millions of clients around the world.

In addition, 500 Startups incubating model has three features: batched small-sum investment, specialized incubating training and increasing investment round by

9. 500 Startups, We uplift people and economies around the world through entrepreneurship, <http://500.co/About>.



500 Startups refined investment model

round. That is to say, it first adopts the “small scale, large base” approach and invests in some startups and then gives them specialized marketing and technological training; at last, it offers additional investment to the survivors from the market competition. The amount of first-round venture capital provided by 500 Startups is confined between 25,000 and 100,000 dollars and it holds 5% of stock rights according to the startups’ estimated market values; the amount of second-round may increase up to 100,000 to 500,000 dollars. If the startups develop well, 500 Startups may take part in the third or fourth round financing led by other VCs.

The advanced notion of “refined investment” integrates the enterprise development model of “rapid renewal, fast evolution” in the internet era with the conservative investment principle of “controllable risk, replicable model”, greatly increasing its robust return on capital.

Key Lessons

500 Startups plays a leading role in the global incubation ecosystem based on its unique global network, internationalized talents and expertise. Its most precious incubating resource is the 2000 investors and mentors all over the world, especially over 200 mentors who used to work for PayPal, Google, Twitter, LinkedIn, etc. They may be of great help for the startups to find high-quality investors or partners in the Silicon Valley.

500 Startups also established a powerful screening network of global incubation projects. Different from the incubators like Y Combinator that openly accept the applications of entrepreneurial enterprises, 500 Startups only accepts entrepreneurial teams directly recommended by its partners all over the world and able to reach its threshold. After the incubation training, all incubated enterprises must leave 500 Startups to make space for next groups. The refined model not only increases the success probability of the incubated enterprises, but also strengthens the intimate relations between the members of incubation community.

Global Market Accelerator Program

Global Market Accelerator Program (GMAP) is a very successful international incubator funded by Australia’s Department of Industry and operated by Latrobe University. It is committed to establishing an interactive network between incubated enterprises, potential clients, business partners and venture capital institutions to help entrepreneurial enterprises to find the first batch of clients from the international market and lay a solid foundation for their internationalization.¹⁰

10. Global Markets Accelerator Program , <https://www.latrobe.edu.au/industry-and-community/industry-partner-of-choice/accelerator/global-markets-accelerator-program>.

Approach to Incubation

The international incubating service provided by GMAP consists of two parts:

The first part is an 8-week “online feasibility study”. In this stage, the startup first locks up an expected target country for its international business and then an exclusive service group is formed by students from a certain university of that country and Latrobe University to provide it with investigation service on market demands, consumption culture and business model. Making use of the students’ comprehensive knowledge, the startup may choose the most appropriate publicity channel for its products and services.

The second part is a 6-month “actual incubation”. In this stage, the startup will choose one of those 4 GMAP global strategic partners, namely imec.start (Belgium), T-Hub (India), Innovation Factory (Indonesia) and Singtel Innov8 (Singapore) to receive actual incubation.

Key Lessons

GMAP’ s success is mainly based on giving full play to the intellectual resources of famous universities and unswerving orientation of internationalized development. Depending on its research and talent advantages, Latrobe University provides the incubated enterprises with professional knowledge of business administration, high-quality interns and social services from international friendly universities, resulting in a unique “international students working group on market investigation” to overcome the barricade of information dissymmetry in the international market.

On the other hand, GMAP has a series of high-quality strategic partners all over the world. They not only cover up the most important economic growth points, but also are very influential in their specialized industries and domains. By means of international cooperation, GMAP greatly improved its specialization of incubation service, enriched its international development experience and completed its mentor network.

Start-up Chile

Start-up Chile (SUP), established in 2010 and with its headquarter located in the center of Santiago, Chile, is a public incubator operated by the development institution--Corporación de Fomento de la Producción de Chile (CORFO) under Chilean government to attract global startups to create their business in Chile. In only a

decade, it has developed into one of the most pluralistic incubating platforms of the world.

SUP’ s initial target is to change Chile’ s traditional economic structure and to get rid of the over-dependence on the export of mineral resources and gradually it is changed into realizing the economic sustainable development by active innovation and entrepreneurship. After 2015, the incubator set new goals – to transform Chile into the world’ s pivot of technology innovation and to build the most vivacious entrepreneurial ecosystem of the world. Therefore, it recruits only high-tech startups with international perspective.

Now the goals have become reality. SUP has incubated 1,960 startups with an estimated value of over 2.1 billion dollars. The retention rate is up to 56.4%. ¹¹46% of the total investment has created job opportunities with about 5,000 new jobs all over the world and over 250,000 indirect beneficiaries. ¹²

Approach to Incubation

The distinct orientation of internationalized development is the most obvious feature of SUP’ s incubation. Ever since its establishment, it has been aiming at introducing Chile to the world and engaged in attracting remarkable talents and enterprises. By far, it has forged a global resource network, including over 100 global partners (including accelerators, universities and regional government institutions), over 60 global private investors and venture capital funds, over 260 global training mentors and over 4,500 graduates all over the world. In addition, SUP, in cooperation with Chile’ s Ministry of Interior and Ministry of Foreign Affairs, provides foreign startups with 1-year work visa and shortens the visa application cycle from 1-2 months to 15 days.

Stimulated by preferential policies, overseas enterprises participating in SUP’ s incubation are three times as many as Chilean domestic enterprises, respectively from over 80 countries and regions such as the United States, Argentina, and India, occupying up to 70% of all entrepreneurial enterprises. SUP’ s pluralistic strategy enables all the participants to have international vision. In

11.Retention rate refers to the proportion of enterprises still operating or having sales groups in Chile to all the enterprises funded by SUP incubating project.

12.Start-up Chile, <https://www.startupchile.org/about-us>.

all the incubation projects, people communicate with each other all in English. While paying attention to the Chilean market, they also extend their visions to the global market beyond the scope of Latin America.

Key Lessons

SUP has always been committed to providing domestic and foreign startups in Chile with supporting platforms so that it could keep the vivacity of domestic entrepreneurial ecosystem. Its successful experience can be summarized in three aspects:

First of all, it is closely associated with the strategy of national economic development and establish the

incubation platform charged by governmental institutions.

Secondly, it makes full use of the global partners and implements "SUP Detecting" Strategy to increase the interaction and adherence between domestic startups and foreign market, as well as the interaction between foreign startups and domestic market.

At last, it adopts flexible organizational structure and operational model different from government departments and bureaucratic administrative system. However, it also strengthens its cooperation with related government departments to promote the development of startups.



03

Post-2020 Vision and Roadmap on Capacity Building of Incubators in the APEC Region

In 2020, APEC leaders declared APEC Putrajaya Vision 2040 to guide future cooperation. As an important part of Asia-Pacific technology innovation cooperation, APEC incubators cooperation is expected to formulate its new cooperation vision in accordance with the features of the post-2020 era and implement the corresponding capacity building roadmap.

New Trends of post-2020 APEC Cooperation

Cope with New Challenge of the Digital Economy

Since 1990s, new business approaches based on the Internet and represented by E-commerce never ceased to emerge and concepts such as “New Economy” and “Internet Economy” gradually entered our life. As we stepped into the 21st Century, with the development of cloud computing, big data, Internet of things and artificial intelligence, modern information technology exert a more extensive and more profound influence on human social and economic activities. This phenomenon is defined as digital economy. Specifically, digital economy refers to a series of economic activities with digitalized knowledge and information as key production factors, with modern information network as important carrier, with efficient use of ICT as impetus of economic structure optimization.

In digital economy, cloud, network and terminal equipment become a new generation of infrastructures; data become means of production; computing becomes productivity; intelligence gives rise to the upgrading of production tools and network brings great changes to the social division of labor. The digital economy is of great significance for all APEC economies to keep rapid growth, improve productivity, cultivate new source of economic growth and finally realize inclusive and sustainable growth.

It is worthy of our attention that the digital economy has also brought challenges to the ecology of Asia-Pacific technology innovation, not only generally changing the traditional model of technological advancement, but also restructuring the regional supply and value chains. In addition, as a new economic morphology, the digital economy raised new requirement in terms of policy guidance and venture capital management. Therefore, we need continuously to improve the related institutional reform of the region and within the economies.

Regard the Inclusiveness as Core Principle of Regional Cooperation

Ever since its foundation, all APEC member economies make great efforts to realize the regional liberalization

and facilitation of trade and investment. In recent years, APEC economies recognize that although the regional economic cooperation has made contributions to income increase, employment expansion and poverty alleviation in this region, its achievement has not been absolutely handed over to every social part and class. Many people are still in lack of means and resource to be integrated into the new economy, which leads to inevitable problems such as deterioration of income gaps and continuous social inequality.

Facing these new challenges, APEC leaders declared a new ambition target -- APEC Putrajaya Vision 2040 to guide future cooperation in November, 2020. The gist of the vision is making “people-centered” as the core principle, highlighting the cooperation of inclusiveness and building an open, dynamic, resilient and peaceful Asia-Pacific community by 2040, for the prosperity of all people and future generations.

Motivate the Strength of Industrial and Business Circles

The cooperation approach of coordinated interaction among government, business and academics is one of the important institutional guaranties of APEC’s huge success. APEC member economies not only carry out extensive policy coordination between government departments, but also invite industrial and business figures, as direct participants of economic activities and principal creators of economic benefits, to submit consultation reports to APEC leaders via APEC Business Advisory Council (ABAC) to forward their suggestions concerning APEC cooperation direction and specific contents.

With the increasing importance of industrial and business circles in technology development, yielding and employment, they will have more leading power in the global and regional economic cooperation affairs. Therefore, APEC leaders stressed that in order to promote the realization of the post-2020 vision, the government departments of all economies must strengthen their cooperation with industrial and business circles in terms of APEC development strategies and continue to deepen good public-private partnership.

Post-2020 Vision of APEC Incubators Cooperation

APEC incubators cooperation is an important part of Asia-Pacific technology innovation cooperation and is expected to formulate its new cooperation vision in accordance with the features of the post-2020 era:

First of all, to reinforce the continuous, rapid and stable development of the Asia-Pacific economy, APEC economies jointly embrace the opportunities of the digital economy and, while continuously accelerating the digitalized transformation and upgrading of the incubators, focus on the transformation of digital technology innovation.

Secondly, to make the technology innovation achievements benefit more people, policy-makers of APEC economies extensively implement effective and operational policies and lead Asia-Pacific incubators to attach more attention to the sustainable and inclusive development.

Thirdly, APEC economies, by means of implementing well-oriented capacity building activities, develop and strengthen the vivacity of disadvantaged groups such as MSMEs, women and others with untapped economic potential and encourage them to be integrated into the increasingly interconnected Asia-Pacific economy with the help of incubators.

Roadmap on APEC Incubators Capability Building

In order to make sure that the APEC incubators cooperation vision can be realized, APEC economies are expected to plan and implement comprehensive collective action roadmap and coordinated individual action roadmap.

Collective Action Roadmap of APEC Incubators Cooperation

APEC economies should collectively implement the following specific, operational action plans in order to realize the Post-2020 Vision of APEC Incubators Cooperation. Considering a series of actions similar to the contents of this vision that have been carried out under the framework of PPSTI, the following action plans should be implemented in supplementary approach:

First of all, in terms of guiding principles of the incubator cooperation, APEC economies should pay more attention to the great significance of incubators cooperation;

Secondly, in terms of social development of incubators cooperation, APEC economies should enhance the inclusive features of their incubators, continuously expand the opportunities for MSMEs, women, disabled people and others with untapped economic potential to participate in the economy, and improve people's digital skills to enjoy the preferential policies of governments in terms of creating high-quality employment and improving people's welfare;

Thirdly, in terms of the stakeholders' participation of incubators cooperation, APEC economies should attract business and academics to promote the adaptive transformation of incubators under the wave of the digital economy.

The specific measures to implement the above action plans may include:

- To put "actively promoting APEC incubators cooperation" as one of prior agendas into the APEC PPSTI's annual work plan in the future 2-3 years;
- To invite ABAC to take part in the incubators cooperation and to make their unique contributions. APEC economies should actively promote the coordination among government departments, industrial and business circles, industrial associations and third-party organizations to keep the stakeholders informed of the development of the projects they are interested in;
- To organize online/offline international symposiums and compile "Case Study and Best Practices of APEC Incubators" to promote the sharing of successful experience among APEC economies in the domains including but not limited to improving MSMEs' internationalization and participation in the digital economy by means of incubators cooperation, sharing the achievements of APEC incubator cooperation with disadvantaged groups, advancing Asia-Pacific technology innovation by means of APEC incubators development, etc.

Individual Action Roadmap of APEC Incubators Cooperation

APEC always encourages its member economies to carry out individual actions for the regional economic cooperation on the independent and voluntary basis. To realize the APEC Incubators Cooperation Vision, the economies are expected to implement the following activities, including but not limited to:

Considering Capacity building as Major Task of APEC Incubators Cooperation

APEC has chosen a clearer concept to strengthen the outside recognition of the economic and technological cooperation, i.e. it emphasizes capacity building as one of the major approaches to cooperate. As an important part of the economic and technological cooperation, the incubators cooperation should also regard the elevation of the capacity building of the developing economies as its principal task. The capacity building has the following three advantages: the capacity building project is relatively neutral and not relevant to unilateral technological or financial assistance; it is conducive to solving specific problems, especial urgent problems of the incubators cooperation; a certain level of international cooperation experience of the participating economies is the prerequisite of the commercialization of the technology innovation achievements as well as the joint actions to cope with globalization.

Selecting appropriate Priorities on Capacity Building of Incubators

The status quo of incubator development and social resource should be comprehensively considered in selecting the priorities and specific projects of APEC incubators cooperation. Therefore, on the basis of the APEC Innovation-driven Development Initiative, the following domains are expected to be selected by APEC economies in the future:

- Social economic activities encouraging the intellectualization of ICT;
- Materialized production encouraging the application of digital technology;
- Cultivation of flexible and professional labor;
- Dialogues and information sharing in terms of incubator innovation;

- Efficient, comprehensive and balanced venture capital management system;
- International cooperation platform promoting the development of incubator.

Encouraging All Members to Adopt More Flexible Cooperation Approach

“Pathfinder Approach” is a flexible regional cooperation approach proposed by APEC. It encourages all members of common interests to make an initiative on the voluntary basis and carry out cooperation in a certain domain. After making substantial progress and accumulating enough experience, they will spread it to all members. Due to the diversity of technology development among different member economies, APEC economies may not reach an agreement at the same time in terms of priority domains and time arrangements. The “Pathfinder Approach” brings a good solution to the problem. This approach should be continuously encouraged and improved in the future.

Encouraging Mutual Cooperation of Governments, Industries, Academics, Researchers and Financiers

As for the scope of participation, all economies should continue to carry out public-private dialogues, broaden financing channels of the incubator, emphasize the incubator’s social responsibility and fully arouse the zeal of all social fields. The development of incubator needs not only the policy support from governmental departments, but also the active participation of scientific researchers, the initial funds invested by enterprises according to market needs, the financing guaranty of financial institutions as well as the information communication platform provided by international cooperation institutions.

In conclusion, APEC member economies should take an active attitude toward the incubator cooperation and, based on the balanced interests between developed and developing economies, follow the fundamental principles of independence, voluntarism and mutual benefit and keep a certain degree of flexibility to realize APEC incubator cooperation vision.



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