

## Science and Technology Trends

### *Fostering Startup Ecosystems*

# An Evaluation of the Startup Ecology in Korea

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## 1. Introduction

The Korean economy is considered, insofar as its existing large firm-oriented growth model, as no longer viable for making leaps forward. At the same time, the expectation that startups serve as the driver of new growth has been constantly increasing, particularly since examples of business growth have come to the fore, including Google, Facebook, Tesla, and Alibaba, which began as small startups and have developed as successful players that lead new businesses. It is expected that the role of startups will expand, especially in the area of the so-called fourth industrial revolution, which includes novel industries such as biotechnology, artificial intelligence, virtual reality, and electric vehicles. Therefore, in the Korean economy, it could be said that the ability to nurture startups is more necessary than ever before.

At this point, an evaluation of the startup ecology in Korea, as well as the planning of future roadmaps based on the results of such an evaluation, will provide a meaningful insight. Considering the widespread use of the term “startup,” work to evaluate the startup ecology has been very limited. This concept is partially mentioned in some policy documents and research literature (Lim, 2015; Small

and Medium Business Administration, annually); however, in-depth and systematic research results have not yet been established. This can be explained by the fact that the current level of startup ecology is not sufficiently mature. Moreover, an evaluation of the startup ecology has been deferred because it is a rapidly changing field.

Notwithstanding these limitations, this study aims to establish a preliminary framework for the evaluation of the startup ecology in Korea. Although few previous studies have been conducted, and there are dynamic ups and downs in startup industries, it is believed that evaluation cannot be avoided when discussing startups in Korea. In this study, the theoretical fundamentals of startup ecology will be discussed, and major field tests evaluated. However, it is expected that the depth of this research will be limited to a basic experimental level.

Why do we need to look at the startup ecology? If a startup company were a tree, then the startup ecology would be the forest. To develop an in-depth perspective, we need to look beyond a single tree, and focus on the founding principles of the forest, which in turn will give us an insight into the life cycle of each individual tree. The concept of a

business ecosystem was first established by scholar John Moore as “An economic community supported by a foundation of interacting organizations and individuals”; it was emphasized that members of the ecosystem are influencing each other's roles by helping one another. Here, it is important to take note of the co-evolution that occurs in response to interactions between members, not unlike the ‘co-evolution’ that occurs in biological ecosystems. Biologist Gregory Bateson defined co-evolution as a ‘reciprocal evolutionary change in interacting species’ (Bateson, 1979), which means that two different organisms evolve by influencing each other. The case in which a change in one species (A) is a catalyst for changes in another species (B), or vice versa, is the basic characteristic of co-evolution. Based on the view that the development of an individual startup is aligned with the conditions of the entire ecology system, this study aims to provide an analysis of the evaluation results of the current status of the startup ecology.

The startup ecology is fundamentally classified into one of two areas. One area is the entrepreneurial ecosystem, while the other is an investment reflux ecosystem (Sohn, 2013). First, an entrepreneurial ecosystem includes the conditions required for startups, incentive systems, and infrastructures. Also, the number of startup companies and the various competition conditions are included. Second, an investment reflux ecosystem includes investment drivers for startups, investment returns from startup growth, a series of processes and sentiments related to investment activities, and infrastructures. The major players include angel investors, accelerators, and venture capital (VC). Also, exit channels such as M&A and the KOSDAQ (KONEX) market are elements of this investment reflux ecosystem.

This study evaluated these two areas separately. It was noted that in both areas globalization is progressing. The role of global players is not crucial yet, but it is worthwhile to mention that their influence

could be massive in the future. It is expected that if global players come into domestic markets, the number of domestic players will increase and competitiveness levels will rise. From this perspective, the participation of global players in domestic inbound areas will have positive effects on the composition of the ecosystem.

This study takes note of the following two characteristics of the startup ecology: the first is that the ecosystem will find its equilibrium on its own, while the second is that a virtuous cycle will be implemented through the interaction between each of the participants. To this end, a virtuous cycle will be realized and fully sustainable when the ecosystem reaches a positive equilibrium, and a vicious cycle will be created when it reaches a negative equilibrium. However, the current equilibrium does not necessarily mean it will yield optimal results. Once the ecosystem reaches its equilibrium, enterprises are provided with a sense of security. This sense of security will allow enterprises to fall into “the success trap,” which refers to the belief that an enterprise's former strategy has enabled a state of security in the enterprise ecosystem. However, this belief is generally erroneous. From this perspective, this study will first expand upon the current equilibrium, and it will then focus on and discuss what future ecology should look like in order to reach a healthier equilibrium.

## **2. An Evaluation of the Startup Ecology in Korea**

In this study, the evaluation of the startup ecology in Korea will include a review of the current conditions of the existing ecosystem; at the same time, it will also focus on how it will be reproduced in the future. The conditions of a startup ecology will also be evaluated by classifying it into either an ‘entrepreneurial ecosystem’ or an ‘investment reflux ecosystem.’ The evaluation results will be

interpreted by considering their implications on future reproduction. Here, ‘reproduction’ refers to the concept that a population of the same species grows and prospers in the ecosystem. The terminology is borrowed from biology, which is the original field for the study of ecosystems. For an economic phenomenon to increase and prosper, its economic suitability is most important. The principle that economically valuable entities will survive and thrive is applicable in this ecosystem space. When we consider the economic suitability of the startup ecology, the success of these startups and the infrastructures that are in place to support them should be reviewed. Next, whether ecology conditions have the mechanisms to distinguish between superior entities and inferior entities should also be investigated. The reason is that the distinction between the two are clear in the healthiest form of evolution, which gradually works to eliminate inferior entities and support superior entities.

### *2.1. An Evaluation of the Entrepreneurial Ecosystem*

A startup trend has been sweeping the globe. In the US, China, and the UK, the number of newly established companies has been constantly increasing over the last three years. In particular, China has recently been actively implementing startup policies. Throughout 2015, the number of newly established companies in China was about 4.4 million, which is an increase of 21.6% when compared with the previous year (2014). It is believed that the startup atmosphere is inspired by the emerging companies that are leading the global market, such as Alibaba and Xiaomi; these companies have a history that spans less than 20 years. In addition to the huge number of startups, the creation of the infrastructure that produced global startups such as Alibaba, Baidu, and Tencent has more important implications (Su, Ali, & Sohn, 2011).

In Korea, according to Statistics Korea and the Small and Medium Business Administration, the

number of newly established companies during the first quarter of 2015 increased by 9.1% when compared with the same period in the previous year; there were a total of 22,652 new companies, a quarter record. Also, the investment for domestic startups in 2014 was KRW 780.2 billion, and the size and number of investments have been increasing steadily ever since. The motivation of prospective startups has been stimulated by some mobile game companies, which are listed as startups, and which have executed successful IPOs in KOSDAQ. Also propelling this trend are buzz-generating companies like Woowa Brothers, which developed the Baedal Minjok application.

One of the main reasons that these results have been brought to light is that the South Korean government selected the nurturing of startups as the most important strategy in the Creative Economy. Supported by the governmental policy, more angel investors and venture capitalists are investing in new startups and accelerator programs (a new type of startup-supporting program); these funders select entrepreneurs and offer them intense support for a short period of time.

With respect to the various areas of the startup ecology, quantitative expansion—especially by young entrepreneurs—is most important; moreover, basic assessment of the forms and effects of government support are also important.

#### *2.1.1. Quantitative Expansion of Startups*

Based on the trends over the last eight years, it was found that the number of newly established companies has been constantly increasing each year. Given that the data include both opportunity-driven enterprises (in which most startup companies are included) and necessity-driven enterprises, it is not possible to estimate the number of startups alone. However, overall, the trends indicate that startups have been actively developing over time.

**Table 1.** Trends of newly established companies

Founder Age	2008	2009	2010	2011	2012	2013	2014	2015
Young (39 years old and younger)	15,778	17,410	18,518	18,665	21,048	21,311	22,806	25,404
Middle Age (40 years old and older)	35,077	39,420	41,794	46,445	53,114	54,263	61,891	68,364
Total	50,855	56,830	60,312	65,110	74,162	75,574	84,697	93,768

(Source: Statistics Korea)

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When evaluating startup ecology, noting the number of startups is important, but it is critical to remember that this figure only captures a segment of the big picture. Qualitative analysis needs to be included, and the two types of enterprises (opportunity-driven and necessity-driven) need to be distinguished.

Supported by the youth entrepreneurship policy, various supportive policies such as entrepreneurship education, commercialization support, and angel investor matching have been implemented, which make it easier for young entrepreneurs to start their businesses. As a result, the number of new companies established by young entrepreneurs has been increasing markedly. For instance, the number of student startup companies rose dramatically from 377 in 2012 to 637 in 2014, and the rate of increase of youth startup companies was nearly 30% in 2015.

However, despite this quantitative growth, it should be noted that there are voices warning against the high dependency on policy support. There have been criticism that government funding has been excessively expanded under the claim, “Youth

entrepreneurs will boost the Korean economy”. Despite a great deal of support, there still are vulnerability factors among youth startups. Specifically, the rate of business closure among young entrepreneurs is 25.5%, which is higher than the average rate of 12.9% (Employment Information of Statistics Korea, 2014). This shows that youth startups are generally not sustainable; the startup idea cannot move forward, and the entrepreneurial spirit is not strong enough. Second, although the number of youth startups has increased, the portion of necessity-driven enterprises remains higher than that of opportunity-driven enterprises. The Creative Economy paradigm spotlighted youth entrepreneurship due to the importance of opportunity-driven entrepreneurship; however, it has been shown that opportunity-driven enterprises have yet to represent the majority in the market. As is well known, necessity-driven enterprises are an alternative to job-seeking competition, and opportunity-driven enterprises are attempts to take on future growth engines. The latter type have the potential to grow into drivers of the national economy; examples include Google, Facebook, and Tesla. Therefore, the effects of the two types of enterprises are significantly different.

**Table 2.** Number of university student startups

Year	2012	2013	2014	2016
Number of Startups	377	500	637	770

(Source: Korea Institute of Startup &amp; Entrepreneurship Development)

The number of university student startups has also dramatically increased since 2014. It is believed that this is directly affected by the Creative Economy policy. It is encouraging that university student startups are active in the areas of idea-based and technology-based startups. However, these enterprises also pose risks insofar as the chance of failure is high given the lack of experience and knowledge. The change in the number of university student startups can be estimated based on the level of governmental policies geared toward encouraging youth entrepreneurship.

The number of university startup clubs has dramatically increased, supported by the governmental entrepreneurship encouragement policy. This policy reflects strong interest in youth startups.

**Table 3.** Number of university startup clubs

Year	2013	2014	2015
Number of Startup Clubs	1,833	2,949	4,070

(Source: 2015 Investigation on the Actual Infrastructure Conditions for University Startups, Korea Institute of Startup & Entrepreneurship Development)

**Table 4.** Number of startups created by university faculty members

Year		2013	2014	2015
Number of Startups	College	9	6	15
	University	69	43	118

(Source: Higher Education in Korea)

The number of startups founded by faculty at universities has been on the rise in 2016. It seems that the government's policy focus in the last few years on raising high-quality technology startups is beginning to take effect. The startups founded by science and technology professors and graduates at various universities can be viewed as representing these high-quality startups. Albeit over a short observational period, the increasing number of these types of startups can be regarded as an encouraging phenomenon when evaluating the startup ecology.

#### 2.1.2. Expansion of Governmental Support

Over the last five years, the amount of governmental support for startups has been consistently on the rise. In particular, the support for startup preparation has dramatically increased. One can interpret this as an influence of the Creative Economy, which focuses on the startups' early stages. Overall it appears that the government has maintained continuous effort to create a startup ecology. Although there have been changes to the policy's motto in accordance with the current governmental slogan, the amount of support provided has not changed significantly.

#### 2.2. Evaluation of an Investment Reflux Ecosystem

The conditions for an investment reflux ecosystem include the presence of angel investors, accelerators, and crowdfunding. Furthermore, exit channels such as M&A and IPO are also included.

**Table 5.** Government support by startup phase (Unit: one hundred million KRW, %)

	2011 Budget	2012 Budget	2013 Budget	2014 Budget	2015 Budget Proposal
Startup Preparation	677.4	613.4	833.2	1,144.3	1,416
Startup Implementation & Commercialization	14,735.9	14,943.3	16,429.7	14,666.3	11,599.6
Early Growth Stage	954.2	2,350.7	3,078.3	3,513	4,006.8
Rechallenge Support	1,687.9	1,866.1	2,160	2,337.9	2,093.1
Total	18,055.4	19,773.5	22,501.2	21,661.5	19,115.5

(Source: National Assembly Budget Office)

### 2.2.1. Angel Investors

It is uncommon for large-scale venture capital investments to reach out first to a startup company. Raising venture capital funds increase the chance for a successful IPO (Sohn, Kim, & Hur, 2012), but in reality, this chance is rare. Therefore, angel investors are important to startup companies (Kim & Park, 2013).

Angel investments are currently facing a revival after a long period of depression that lasted the past 15 years. The first renaissance was the venture boom period of the late 1990s; following that, a slump continued for more than 15 years. When attracting investments for startups, the closest investors are angel investors. In this vein, the revitalization of angel investment is regarded as an important condition for the development of a startup ecology.

**Table 6.** Angel investment in Korea

Year	2011	2012	2013	2014	2015	(March) 2016
Number of Angel Investors	369	2,610	4,868	7,060	9,468	10,377

(Source: Korea Business Angels Association)

### 2.2.2. Crowdfunding

Crowdfunding, a funding practice whereby monetary contributions are raised from a large number of people, is in its beginning stages. There is much room for improvement and development with respect to Kickstater, which is a US crowdfunding platform. It is believed, however, that when startups are nurtured, the crowdfunding market will naturally expand. Economic principles cannot go against the current; it is predicted that during the initial years, crowdfunding will be firmly rooted through supporting policies.

**Table 7.** Organization of private investment funds and investment (cumulative)

Category	2009	2010	2011	2012	2013	2014
Number of Funds	71	71	71	78	85	108
Amount (unit: one hundred million KRW)	407	411	411	432.3	664.9	731.5

(Source: Korea Business Angels Association)

**Table 8.** Investment crowdfunding in Korea

Industry	Offering Amount (KRW)	Issuing Amount (KRW)	Offering	Issuing	Funding Success Rate	Issuing Company
Manufacturing	3,996,023,012	2,109,680,500	24	13	54.2%	13
Publication, video, broadcast communications, and information services	2,630,153,200	1,323,776,000	21	13	61.9%	13
Professional, scientific, and technical services	2,515,940,808	865,454,036	14	7	50%	7
Wholesale and retail	2,300,025,899	1,585,214,649	12	9	75%	7
Finance and insurance	800,000,000	800,000,000	2	2	100%	2
Arts, sports, and leisure-related services	520,000,000	0	3	0	0%	0
Associations and organizations, repairs, and other personal services	300,800,000	0	1	0	0%	0
Education services	200,000,000	0	1	0	0%	0
Real estate and leasing services	150,000,000	148,800,000	2	2	100%	2
Agriculture, forestry, and fisheries	50,000,000	0	1	0	0%	0
Total	13,462,942,919	6,832,925,185	81	46	56.80%	44

(Source: CrowdNet)

### 2.2.3. Accelerators

The key elements of an accelerator program include a small equity investment for early startups and an intensive training (mentoring) period for a certain amount of time. Generally, an accelerator program selects a few promising startup companies (as little as two and as many as dozens) and invests tens of millions of KRW for each company, securing about 5 percent of equity (Kim & Hong, 2013). These programs then move companies to a business incubator center, which provides three to six months of Spartan training and mentoring. These programs help entrepreneurs fast track the development of their products or services. Startup founders who have success experiences share their know-how on product development and marketing. By the time of the completion of the program, additional opportunities for supplemental funding are offered via Demo Day when the successful founders invite many investors through their networks.

The accelerator program is a new model that focuses on funding and incubating startup companies, as exemplified by Y-Combinator in Silicon Valley in 2005 (Kim, S.W., 2015). Y-Combinator has developed Dropbox and Airbnb into global companies. Following its success, TechStars was established in 2006, Seedcamp in 2007, and

Startupbootcamp in 2010. In Korea, Primer is the first accelerator, which was established in 2010. Currently, more than 20 accelerators have been established and are in operation. As a point of reference, one of the most representative accelerators in Korea, SparkLabs, has operated six batches thus far and nurtured 50 teams (as of December 2015). It is estimated that private accelerators in Korea have nurtured about 700 teams.

An accelerator is a business model that earns its profits by nurturing startups, and it has become a growing trend worldwide since the model was successfully established in the US (Kim, S.W., 2015). Currently, accelerator programs are actively in operation in Korea; these programs are continuously trying to identify promising startups, while establishing their own business models by nurturing these startups. However, there are not enough empirical studies on the causes of success or failure of accelerator programs, or on how they provide assistance to the startup companies. The reason for this lack of data is that the history of accelerator programs and their operations is short. The existence and efforts of accelerator programs are important for the development of a startup ecology; however, it seems that more time is required to evaluate how these programs can internally achieve their respective goals.

**Table 9.** Number of startups selected by accelerators in Korea

Global Startup Network	NEOPLY	TheVentures	VENTURE SQUARE	VENTURE PORT
45 Companies	22 Companies	17 Companies	28 Companies	15 Companies
ORANGE FARM	SparkLabs	CNT TECH	Coolidge Corner	Fashion Technology
62 Companies	48 Companies	25 Companies	25 Companies	8 Companies
FAST TRACK ASIA	FuturePlay	Primer	Mashup Angels	Kstartup AppCenter
23 Companies	30 Companies	72 Companies	41 Companies	20 Companies
SK Planet 101	sopoong	D3 Jubilee	ActnerLab	KOISRA Seed Partners
35 Companies	17 Companies	19 Companies	12 Companies	14 Companies

Total: 578 Companies

(Source: Each company's website)

#### 2.2.4. M&A

For startups, one of the important exit opportunities is the M&A (Lim, J.W., 2015). This is evidenced by success stories of many US startup companies that have been acquired by other firms. For instance, Instagram initially had only about 10 employees and was barely two years old, when it was acquired by the emerging large company, Facebook, for the tremendous amount of 1 billion USD (about 1.2 trillion KRW). This is an exemplary success story for startups.

The one area Korea needs most at present involves mergers and acquisitions (M&A). M&A is an essential factor that is urgently needed and should be further developed to ensure growth. Multilateral efforts to expand M&A have been undertaken, but it is not an easy problem to solve due to a number of cultural constraints. Therefore, it is believed that more effort and patience is needed.

**Table 10.** Startup M&A in Korea

Year	2014	2015
Number of Companies	9	72

(Source: Startup Investment Trends, Platium)

#### 2.2.5. IPO (Initial Public Offering)

Besides M&A, another exit opportunity available for startups is the initial public offering (IPO). NASDAQ - where US high-tech companies including Google and Facebook are listed - is a representative IPO market. Similarly, in Korea, KOSDAQ is the main IPO channel.

The number of companies listed on the KOSDAQ is currently 1,168, as of the end of June 2016. The market capital amounts to about 206 trillion KRW.

However, the opportunity to list a company on the KOSDAQ does not come easily. Considering that the number of startups and the number of certified business ventures exceed 30,000, this shows how challenging it is to go public through an IPO on KOSDAQ. In the US, the proportion of IPO firms on the NASDAQ is less than 30%, and the proportion of exit through M&A is more than 70%. This is the reason why we hear startup Cinderella stories following acquisitions by large cap companies. In Korea, attaining high absolute scale of IPO is difficult for startups, which is why expectations are high for a more active M&A market.

The KOSDAQ market has been maturing over the course of the 20 years since it first opened in 1996. The KOSDAQ was shaped in a developed market, and it came in third place of all IPOs in globally emerging markets. However, it is clear that an IPO is not an easy exit channel for startups.

### 3. Conclusion and Discussion

It cannot be denied that the role of startups is important for propelling the Korean economy. It is also reasonable to suggest that venture-based startup growth is more suitable than larger company-focused growth, especially in new industrial areas such as biotechnology, fintech, artificial intelligence, virtual reality, and smart farming.

From this perspective, 'An Evaluation of the Startup Ecology in Korea,' as proposed by this study, is only at the experimental level; however, it is meaningful insofar as it evaluates the maturity level of an ecosystem that serves as an absolute condition

**Table 11.** The number of IPO firms on KOSDAQ by year (Unit: Number of firms)

Category	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15
General	71	52	70	56	67	38	55	58	61	26	38	43	77
SPAC	-	-	-	-	-	-	-	18	1	-	2	26	45
Total	71	52	70	56	67	38	55	76	62	26	40	69	122



for the nurturing of startups. Also, it is meaningful to note that the measures used to develop a healthy ecosystem were reviewed based on the evaluation discussed herein.

The primary results of the evaluation, which featured the classification of two key elements of the ‘entrepreneurial ecosystem’ and the ‘investment reflux ecosystem,’ are as follows. First, the startup ecology is growing relatively actively, and it is estimated that in recent times, the number of startups that have been founded has increased at a rapid pace due to the government's promotion of the Creative Economy paradigm. However, an increasing number of startups is not always a positive phenomenon. The increase of startups must be accompanied by more high-quality startups. Given that the number of startups founded by university professors or graduate students (who can develop innovative or novel technologies) has neither increased nor decreased, it can be evaluated that qualitative growth is lagging. It is time that the role of technological startups is ascribed greater importance than that of necessity-based startups, and it is believed that a startup policy reflecting this point is required.

The recent startup boom reminds us of the failures associated with the first venture boom from 1998 to 2000. At that time, the excitement over business ventures was high, but only gave rise to young entrepreneurs who were unprepared. The same mistakes should not be repeated again; young entrepreneurs should be nurtured so that they can lead the Korean economy (Sohn & Kenney, 2007). Korea has grown to become the world's 11th-largest economy; however, even its key industries are facing a critical situation due to the changes in areas of specialization in Northeast Asia. Moreover, the technology pursuits of China further highlight how important it is to focus on progress without making costly mistakes. We already experienced the chaos that followed the end of the first venture boom

(1998-2000), when the startup ecosystem floundered in the absence of true entrepreneurship (Sohn, 2004). The government needs to prepare policies that prevent these problems from emerging in the Creative Economy, while also helping young startups to truly succeed.

Whether they become game changers, entrepreneurs that control networks, or prominent business operators, there is a need for young entrepreneurs to establish themselves in the market. In particular, as startup policies are currently focused on supportive measures (especially by providing proactive support), young entrepreneurs may become vulnerable to moral hazards (Sohn, Kim & Lee, 2009). One could argue that these policies have given rise to the following two problems. First, young people who are not truly determined to establish a business may stay in the young startup group, possibly becoming ‘prize hunters,’ who seek prizes in various startup competitions. Second, this shows the limitations of hindering identification of true innovation. In various venture activities, ‘differentiation’—which can differentiate superior entities from inferior entities—is a core function. Thus, it is depressing to note that such differentiation is not occurring in the early stages of startup development.

As the number of startups increase, the differentiation mechanism should be activated to distinguish between superior entities and inferior entities. However, it appears that the preparation for this mechanism is insufficient. Since the supply of startups has increased, especially due to policy support, such preparation has become critical. Before the market distinguishes between superior startups and others, a general supportive policy is the major lifeline for a startup ecology. When support policies are applied equally to all startups, moral hazard will result, and even lead to reverse selection against quality startups. The healthiest startup ecology is an ecosystem in which truly superior startups are

selected and are increased in competitiveness (Sohn, 2007). The future roadmap for startups in Korea should be established to lay the foundation for these conditions to emerge in an entrepreneurial ecology.

Second, unlike the growth of an entrepreneurial ecosystem, it was evident that an investment reflux ecosystem is still in its early development phase. An investment reflux ecosystem includes investment incentives, startup growth, and investment returns, and the major players are accelerators, angel investors, and crowdfunding. Overall, it has been shown that in its current state, the investment reflux ecosystem cannot be evaluated given that the picture of the currently existing infrastructure and the status of various players in this model are generally in their infancy. However, as the supply of startups and the proportion of blue-chip startups will increase to meet the growth of new industries, it is certain that the conditions for an investment reflux ecosystem will continue to develop. This is represented by the aggressive attraction of accelerators, the active participation of global players, and the reform of crowdfunding policies. One must remember that those seeds that sprout early need to take root in difficult environments, and once cultivated with care, they will subsequently act to nurture new startups. Evaluation of this investment reflux ecosystem will be left for future research.

Examining the future of the startup ecology in Korea, several facts that should be taken note of and must be attended to are apparent. An ecosystem will inevitably reach its equilibrium; however, this balance is not at all related to an ecosystem's overall performance (Sohn, 2013). In other words, equilibrium is not always a desirable point, and it also is not always the state in which optimal results are obtained. An ecosystem does not evolve in a specific direction with a particular purpose in mind, but simply continues to follow the current. In this vein, one can clearly understand why Charles Darwin referred to an ecosystem's evolution as a 'blind watchmaker.'

The same is true for the startup ecology in Korea. If we do not make an effort to promote the healthy evolution of an entrepreneurial ecosystem, it is difficult to predict the direction of its development in the future. The case in point is the fact that over the past 15 years ventures in Korea have reached its equilibrium by the convenience of several stakeholders rather than striking an optimal balance. I have named this concept an 'evolution failure' (Sohn, 2013), which means that the Korean economy did not reach its optimal point for startups; rather, an equilibrium was reached where it conformed to a "comfortable" condition for existing startups. With respect to the argument that startups should play leading roles in the Korean economy to help propel it forward, it is essential that the startup ecosystem's conditions be healthy and sophisticated enough to direct its evolution.

The role played by the government is not always negative, and it is also encouraging that some sophisticated programs are already being implemented. A good example of this is the "TIPS Program," which selects promising startup teams through angel investors and provides government R&D services linked to the angel investment. This policy encourages high-quality manpower to pursue technology startups; this can yield positive effects such as promoting angel investments, developing M&A markets, and activating supplemental venture capital investment markets. It provides opportunities for technology startup teams with limited investment funds, which in turn will prompt private angel investors to enhance their capacity to identify and incubate these startups. For the selected startup teams, angel investments of 100 million KRW for a maximum of up to three years, plus up to 500 million KRW (about 90%) +  $\alpha$  of government R&D, is provided for initial establishment, R&D, and commercialization. This may be regarded as good practice, where the government has come forward to foster the creation of the market in an environment

where the investment market for a startup ecology is underdeveloped. As such, policy intervention is inevitable for market creation.

One of the notable trends in the startup ecology in Korea is globalization. Globalization has been prominent in two areas. The first is that global players have been entering into the Korean startup ecology; the second is that there is demand for Korean startup companies to expand into global markets, including in China. The level of domestic players is rising, and their level of competitiveness is also being amplified, particularly since global players have emerged in the Korean startup ecology. In this regard, it is estimated that the domestic participation of global players will serve as a signal that big shifts are unfolding in the startup ecology in Korea. As this will bring about revolutionary changes that will propel the development of the investment reflux ecosystem, which is currently in its early stages, it is believed that this change will be a turning point that will create lasting changes in the ecosystem. In addition to comprehensive incubators like Google Campus, accelerators in the US and China are also showing interest in numerous startups in Korea. The diversity they introduce to the ecosystem will ultimately help enhance the level of competitiveness among participants in Korea's startup ecosystem.

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