

## 문재인 정부의 ICT창업정책

신진\*

### Moon Administration's ICT Startup Policy

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#### 요약

문재인 정부는 새로운 여건 창출, 적극적인 투자 및 벤처 투자의 선순환이라는 세 가지 성장 방향을 제시했다. 정책은 점진적이지만 현재의 한국 경제 환경에서 벤처 기업의 혁신 붐을 창출하는 데는 충분하지 않다. ICT 창업 지원 정책은 제품 출시 단계에 좀 더 집중되어야 한다. 창업기업 및 중소기업의 성장을 위해서는 세계 시장에서 경쟁력을 확보하기 위한 가치 사슬 확립이 중요하다. 대기업과의 기술 협력 및 해외 공동 진출 등 글로벌 시장 진출을 위한 교두보 확보가 필요하다. 창업 정책의 최종 목표는 국가 경제의 지속적 성장과 고용 확대이다. 창업 친화적 환경을 조성하기 위해서는 공정 거래의 확립과 창업 생태계의 강화가 중요하다. 자금 지원 프로그램은 보편적 지원에서 선택과 집중 강화로 전환해야 한다.

#### ABSTRACT

The Moon administration has proposed three major directions for startup growth: the creation of a new environment, active investment, and the creation of a virtuous cycle in venture investment. The policy is progressive but not sufficient to create a startup innovation boom in the current Korean economic environment. ICT Startup support policies must pay more attention to the product release stage. For growth of startups and small businesses it is important to establish a close value chain to secure competitiveness in the global market. It is necessary to secure a bridgehead to advance into the global market, including technical cooperation with large companies and joint advancement overseas. The final goal of the startup policy should be the continuous growth of the national economy and the expansion of employment. The establishment of fair trade and the strengthening of the startup ecosystem are important to foster a startup-friendly environment. Funding programs requires a shift from general support to enhanced choice and focus.

**키워드** : ICT, 창업, 혁신, 정책, 문재인

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## I. Introduction

The Moon administration, which assumed power on May 10, 2017, has proposed both Income Driven Growth and Innovation Growth strategies as its main economic policies. It expects the drone, self-driving car, smart city, and smart factory industrial sectors to become the main engines of economic expansion. These are mainly ICT-related industries. The Moon administration has asserted that startups have not experienced sufficient growth because the Korean system has not been established properly. The Development Policy for Innovative Startup Ecosystems made by all relevant ministries on November 2, 2017 indicates that the administration believes that the innovation startup ecosystem in Korea has many problems. Innovative startup dynamics have degraded, innovation has been quantitatively and qualitatively insufficient, venture capital remains insufficient and less adventurous than in major countries, the recovery and redevelopment virtuous cycle is weak, and gradual venture activation measures have failed to sufficiently diffuse the boom [1].

## II. Startups in Korea and Foreign Countries

### 2.1. Foreign Countries

The “OECD Project on the Dynamics of Employment,” a paper that analyzes 17 OECD countries, Brazil, and the United States, demonstrates that among small and medium sized enterprises, young firms play a central role in creating jobs, whereas old SMEs tend to destroy jobs. The paper also shows that, throughout the business cycle, young firms are always net job creators. The authors point out that large cross-country differences in the growth potential of young firms stem from the varying efficiency of national policies in enabling firms to create jobs as shown in table 1 [2-3].

Korea’s numerical share of startups is above average among the 18 countries surveyed. However, startup size in Korea is less than half of the average. Japanese

startups are similarly small and Japan’s numerical share of startups is half of Korea’s. This indicates that more startups are just for living in Korea compared other countries as shown in Table 2.

**Table. 1** Age Composition of Small Businesses

	Startups (0-2)	Young (3-5)	Mature (6-50)
JPN	5.9	8.0	86.1
FIN	9.4	13.5	77.0
ITA	12.5	15.5	72.0
BEL	17.0	14.1	68.8
SWE	17.8	15.5	66.6
CAN	16.7	17.5	65.8
PRT	18.7	14.8	66.5
NOR	14.1	17.6	68.3
USA	20.5	16.7	62.7
NLD	21.2	16.8	61.9
FRA	22.8	17.6	59.6
AUT	19.5	18.4	62.1
GBR	22.4	18.1	59.5
LUX	22.0	18.2	59.8
NZL	20.1	20.3	59.6
ESP	26.3	19.7	54.0
HUN	23.6	20.0	56.4
BRA	39.8	25.8	35.6
Average	19.5	17.1	63.5
KOR	23.5	19.9	56.7

Note: To calculate the number of small businesses with fewer than 50 employees, I used the Ministry of Employment and Labor’s business size data and applied it to the 2016 nationwide business survey data.

Data: [2-4]

**Table. 2** Size and Share of Startups

		Size of startups	Share of startups
Manufacturing	JPN	4.0	4.1
	18 countries Average	10.2	13.3
Services	JPN	3.0	10.7
	18 countries Average	4.9	20.5
All industries	Korea	3.3	23.5

Note: This table reports the average size of start-up firms (from 0 to 2 years old) and the share of startup firms in the total number of firms by sector.

Data: [2-4]

The Labor Demand Forecast shows two labor market change scenarios stemming from the Fourth Industrial Revolution in Korea. The standard outlook reflects a situation in which recent growth trends will continue without special measures for domestic and overseas environmental changes including the Fourth Industrial Revolution. ‘Prospects for Innovation’ scenario presumes that firms are actively responding to changes in domestic and foreign environments caused by the Fourth Industrial Revolution and inducing growth through innovation in the economic and industrial structure. Even the prospects for innovation perspective only projects a 0.03% increase in the employment rate over the standard outlook in all industries. As shown in Table 3, active innovation could raise the job increase rate 1.4% in the information communications sector, from 1.3% to 2.7% [5].

**Table. 3** Change in Employment in IT Related Jobs

Jobs	number of employed			Change (2016~2030)		Change rate (%) (2016~2030)	
	2016	2030 (base)	2030 (innovation)	base	innovation	base	innovation
Information communications professionals and technical staff	407	489	590	82	183	1.3	2.7
Electrical and electronic functional jobs	323	335	352	12	29	0.3	0.6
Video and communication equipment functional jobs	74	82	88	9	15	0.8	1.3
Mechanical, electrical, and electronic operations jobs	442	490	502	48	60	0.7	0.9
Subtotal	1,246	1,396	1,532	151	287	0.8	1.5
All industries	26,235	28,099	28,217	1,863	1,982	0.49	0.52

Data: Labor Demand Forecast in Fourth Industrial Revolution, Korea Ministry of Employment and Labor, March 2018

**Table. 4** ICT Startups in Korea

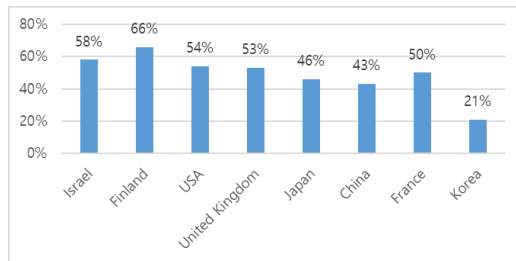
		ICT	All industry	Manufacturing	Publishing, video, communication and broadcasting service
employee	0-9	67.8%	84.5%		
	10-49	30.4%	36.0%		
	50-99	1.5%	1.3%		
	100-	0.3%	0.8%		
maturity	0-2	18.2%	45.7%	39.6%	47.2%
	3-5	38.9%	38.7%	42.0%	39.6%
	6-7	43.0%	15.6%	18.6	13.1%
status	corporate	72.0%	8.2%	17.5%	45.4%
	individual	28.0%	91.8%	82.5%	54.6%

As shown in Table 4, the ratio of late stage (6-7 years) ICT startups in Korea is 43.0%, which is very high compared to other industries. The ratio of corporate ICT startups is also higher than in other industries. In addition, compared to the distribution of employees in all industries, ICT industry startups have slightly higher numbers of employees [6].

### III. The Moon Administration’s Recognition of Startup Ecology in Korea

Moon and his majority members view the past 10 years as a lost period in the history of Korean governance; they assert that, during this time, the government failed to properly implement most policies, which caused bad results to accumulate. Government officials have brought this perspective to their efforts to identify the reasons startups have not succeeded as expected. The Development Policy of Innovative Startup Ecosystem issued to all related ministries on November 2, 2017, clearly states the Moon administration’s view that the innovation startup ecosystem in Korea has many problems. Their explanation of these problems is as follows [1].

① Degradation of dynamics in innovative startups in Korea. Dynamic domestic innovation, such as the initial venture boom of the 2000s, helped the country overcome the so-called IMF financial crisis and achieve subsequent economic growth; however, overall vitality decreased thereafter. The vitality of the start-up ecosystem has since declined and start-up firms' failure to grow into middle and large enterprises has fortified the economic structure centered on the traditional enterprises. Korea is home to only two of the 215 unicorns worldwide and the percentage of self-employed rich who have acquired their wealth through start-ups is lower in Korea than in major countries.



**Fig. 1** Ratio of Startups for Opportunity Seeking  
Data: OECD, 2014

② Insufficient quantitative and qualitative innovation in startups. While quantitative indicators such as the number of new corporations and the number of venture businesses have enjoyed steady upward trends, the quality of innovative start-ups remains insufficient. As Fig. 1 shows, the percentage of startups that have successfully engaged in seeking opportunity to succeed is very low in Korea compared with foreign countries. The majority of domestic startups simply maintain company livelihood, and the percentage of such startups in major European countries, the United States, and China is less than half of the percentage in Korea. Korean startups currently lack highly educated (individuals with master's or doctorate degrees) management and employees. Only 5.3% of startup CEOs have master's degrees.

③ A lack of venture capital and less adventurous approaches than in major countries. Venture investment is currently increasing due to increased government investment in funds, but the levels of venture capital remain sufficient relative to the size of the Korean economy. The percentage of venture investment relative to GDP was only 0.13% in 2015 compared to 0.33% in the US and 0.24% in China. Thus, Korean startups depend more on financing in the form of loans than on investments because firms do not receive sufficient venture capital. In particular, the amount of funding needed at the growth stage after product development is significantly lower than in other countries. The lack of a strong connection between venture capital and finance policy reduces the ability to provide funds to innovative and highly profitable firms.

The venture nature of venture capital in Korea is also relatively insufficient. Domestic venture capital investments in common stocks are only around 20%, with investments in preferred stocks and corporate bonds accounting for a high percentage. In addition, new types of funding such as angel investment and crowd funding for early startups is still in its early stages.

④ Weak Virtuous cycle of Investment → Recovery and Failure → Redevelopment. The supply of venture capital is limited by the deactivation of reclamation markets such as KOSDAQ and M&A. The lack of awareness and participation of existing large firms and investors in M&A and the insufficient institutional basis of the market has caused related market formation to remain sluggish. The percentage of venture investment recovery in Korea was M&A 11% vs IPO 89% compared to M&A 94% vs. IPO 6% in the US in 2016.

Market functions such as the second division of the KOSDAQ market are also weak. Being listed and reclaimed from the KOSDAQ takes a long time and the size of financing by firm through the KOSDAQ is not enough. As of 2016, recovering funds through the KOSDAQ market IPO took 11.4 years on average. The amount of funding for KOSDAQ markets (IPO + additional capital) was reduced from 7.1 trillion won in

2000 to 3.7 trillion won in 2016. In addition, market vitalization demand is currently high in other markets such as Konex, K-OTCM, etc.

Institutional and policy support for re-development needs to be strengthened. The CEO's burden regarding business failures, which includes the joint certification requirement for private financial institutions, remains high. Expenses for representatives of closed businesses in 2017 was 356 million won, including 309 million won for counterparty guarantees and 37 million for taxes.

Government Policy focuses support on the start-up stage. The amount of support for startups in 2017 was 594.5 billion won, but only 213 billion of that sum went toward re-development stage. The 2-year survival rate was 47.5% for startups (2014), but 83.9% for re-development stage firms (2016).

⑤ Insufficient development and diffusion of boom due to gradual venture activation measures. To this point, the government has provided diverse policy support for the revitalization of innovative start-ups and venture businesses. The government prepared and implemented various policies to support start-ups through various departments and sectors. Seven ministries are developing and implementing policies worth 651.8 billion won to support start-ups. Policy financing such as fund of funds investment and the creation of growth ladder funds has been expanded. Fund of funds investment was 92.5 billion won in 2011, 142.5 billion won in 2013, 396.1 billion won in 2015, and 213 billion won in 2016.

Although the data shows achievements such as the increase in venture investment and a growing number of venture businesses, gradual and segmented policies have limited the creation of a private venture boom. The measures announced by the government have focused on gradual reform rather than improvement of the innovative system and incentives. They have appeared hesitant to use the policy instruments at the government's disposal, such as easing various entry and action regulations. Examples include the excessive capital and professional staffing requirements for the establishment

of start-up investment companies and similar venture investment systems defined by different laws.

#### IV. Startup Policy Proposed by the Moon Administration

The Moon administration has set the goal of establishing a startup policy in which high-quality human resources are actively involved in starting businesses and in which innovative startups grow through venture investment. They proposed the following three major directions of growth [1].

① Create an environment for venture firms to grow into global enterprises by encouraging talented people to challenge their startups to innovate.

② Actively invest in startups and facilitate the sharing of venture investment growth outcomes.

③ Establish a value chain with the following smooth ongoing virtuous cycle: Startup → Fail → Redevelop and Investment → Yield → Reinvest.

##### 4.1. Creating an Friendly Environment for Innovation

The Moon Administration's policy aims to induce high level entrepreneurs from firms, universities, and research institutes to launch startups, and to support their growth into global firms.

##### 4.1.1. Creating an environment for core technology personnel

In case of failure in spin-off businesses, the government will reduce income taxes and corporate taxes by 50 percent over the next five years and introduce a leave system that enables members to reenter in their the previous position when they failed. If large firms support spin-off startups by participating in win-win cooperation funds, the government will deduct three times their contributions from corporate income.

To encourage outstanding human resources, such as professors and researchers, to join or launch startups, startup performance will be reflected in the professors'

reappointment evaluations and will induce relaxation of conditions for temporary leave and getting a position related to startup. To promote the convergence of human resources from other fields and backgrounds, the policy will give priority to these groups through technology startup support programs and funding. To support startups based on social value, the government will establish an investment fund of 100 billion won.

#### 4.1.2. Strengthening the private-oriented screening function of innovation firms

The policy will transfer the right to confirm venture businesses to a private committee of senior tech firm executives and venture capital experts, strengthening the screening process to ensure that highly innovative and promising startups receive support as venture businesses. The policy will also abolish the government-oriented type of venture verification based on loan and guarantee performance, expand the research development type, and newly establish the new technology growth type. It will expand the validity period from the current 2 years to 3 years to resolve the inconveniences (those related to document preparation, for example) of extending the verification period for venture businesses.

The new policy will also select targets by private sector and expand the TIPS (Tech Incubator Program for Startup) method that receives government support into an overall support system. However, it will first support in-house venture support systems, startup leadership colleges, startup leap packages, and re-launch programs. It will prepare a “Mid-to-Long-Term Transition Roadmap” that provides adequate timing for detailed transitions by reviewing all existing startup and venture policies at zero-base.

In addition, the policy will expand technical financial infrastructure so that funds can be raised based on technological skills and future growth potential even in the absence of collateral or credibility. It will develop an integrated loan model that combines a credit rating with a technology evaluation and induces application and utilization of private banks.

#### 4.1.3. Removal of business barriers, difficulties, and burdens

The Moon administration’s policy will extend the deadline that exempts startup firms from paying taxes by 5 years (up to 2022) and gradually expand the types of exemptions and target industries. The government will ease property tax burdens on startups and the acquisition taxes from innovative firms in metropolitan areas.

It aims to create a makerspace so that creative ideas can be commercialized through the utilization of production equipment such as 3D printers. The policy will support the development of the ongoing Pangyo Creative Economy Valley, which focuses on early startups and support agencies, as the best innovation model in Korea. It will establish 1:1 matching support program among startup firms that have experienced difficulties in technology and commercialization with skilled manpower subject to the wage peak system of public institutions. By focusing on innovation centers and TIPS towns, the policy aims to expand business support centers for startups regarding issues such as labor, taxation, and the law.

#### 4.1.4. Overcoming Death Valley and strengthening support for growth

The Moon administration’s policy will expand the size of the policy package that supports the growth of 3-7 year-old businesses to 100 billion won. It will support business model innovation, the verification and reinforcement of items, market development and the advancement of global markets, and R&D with up to 200 million won for two years. To expand the scope of startups’ initial procurement opportunities, the new policy will abolish performance requirements and switch to a qualification system for small contracts (less than 2.1 billion won). It will also introduce a competitive communication method to promote development and the purchasing of innovative products and services upon their emergence. Of the innovative businesses discovered through TIPS (1,000 over 5 years), the 20 firms with the highest levels of innovation and growth potential are

eligible for support of up to 4.5 billion won annually.

To support startups through global venture capital, the government will prepare an additional 1.4 trillion won foreign investment fund jointly with the fund of funds. The new policy will partially reorganize the export incubator support program for small and medium-sized businesses to support overseas advancement. It will support the procurement of office space, marketing, and legal consulting for firms that wish to advance into foreign markets through incubator facilities established at major trading bases (12 countries).

#### 4.2. Venture investment funds increased dramatically

The Moon administration's policy will expand the venture investment boom by strengthening the government's pump priming role through financing policy, drastically improving the investment environment, and expanding investment incentives such as tax support.

##### 4.2.1. Provides Large-scale Venture Capital

The administration aims to raise 10 trillion won in innovation risk funds between 2018 and 2020 to expand the portion of venture investment to 0.23 percent of GDP (2015, US 0.33%, China 0.24%). It will also provide 20 trillion won to firms that received investment from innovative venture funds when firms need large-scale funds as they do for M&A, business restructuring, and facility investment.

##### 4.2.2. Improving the venture investment environment for the general public and workers

To induce investment in startups from retirees and already grown ventures, the Moon administration's policy will upgrade the income deduction section of angel investment and as well as the deduction rate. It will apply income deductions to startups with excellent technology within 3 years. It will also allow all industries besides finance, insurance, real estate, and gambling to participate in crowdfunding and strengthen supervision of startups. The policy will, moreover, ease regulations in areas such as crowdfunding investments,

limits on resale, and advertisements. The policy will also include crowd-funding investment in firms less than 7 years old in the angel investment deduction.

The Moon administration will conduct performance-sharing consulting to promote the mutual growth of employees and workers and to expand income deductions for employee shareholders of startups and venture businesses from 4 million won to 15 million won. To facilitate the inflow of key human resources and to enable the sharing of experience, the administration will not levy any tax on up to 20 million won in the exercising of venture business stock options.

##### 4.2.3. Creating conditions for entering and investing venture capital

To apply the same regulatory principles for the same behavior, the Moon administration's new policy will integrate investment-related institutions distributed under different acts into the Investment Promotion Act. It will also lower the capital requirement from 5 billion won to 2 billion won, and ease the professional human resources requirement. In addition, it will mitigate restrictions on investment targets, scope, and methods so that startup investment companies and unions can freely operate and invest in funds.

#### 4.3. Establishing a virtuous cycle of startup and investment

##### 4.3.1. Improving the competitiveness of the recall market such as KOSDAQ

The Moon administration's policy will expand the tax deduction for R&D costs for new growth from 30% to as high as 40% to support the efforts of mid-sized KOSDAQ listed firms to secure new growth engines. Connex will expand the limit of small public offering from 1 billion won to 2 billion won to create a growth channel for firms. To vitalize the recall market for unlisted firms, the K-OTC will have a "specialized trading platform" and will greatly ease regulations including public disclosure duties.

#### 4.3.2. Expanding the foundation for vitalizing the M&A market

The Moon administration's policy will extend the retention period for small and medium-sized firms purchased by large enterprises from 3 years to 7 years. It will facilitate regular meetings between foreign venture capital firms and domestic startups and establish a joint venture between Korea and China to promote Chinese capital investments. The policy will also secure M&A sales information through Korean startup media and accelerators, supplying them to foreign investment information networks (CrunchBase, etc.) in a timely manner.

#### 4.3.3. Strengthen safety net supporting re-launching and re-creation

In relation to institutional financing, the Moon Administration's policy will also abolish the joint guarantee system for firms over 7 years old. It will exempt the credit section of loans with guarantees from the joint CEO guarantee that banks previously required.

### V. The Moon Administration's Recognition of Startup Ecology in Korea

The Moon Administration's Recognition of Startup Ecology in Korea The Moon administration's perspective is not far from the truth. According to Startup Genome, Seoul's startup ecosystem has performed a very low level. A 2017 study showed that the value of Seoul's startup ecosystem was 2.4 billion dollars while the average value for the 55 surveyed cities was 4.1 billion dollars. That of Silicon Valley was 264, Beijing 131, Tel Aviv 22, and Singapore 11 [7].

The Moon administration's policy solutions appear reasonable and represent an improvement from the policies of previous governments—every new policy looks better than the policy that preceded it. However, the problem is with the Moon administration's approach is that it will not significantly improve startup outcomes.

In fact, the new policy shows no basic improvement. The fundamental question is why Korea has not experienced a startup boom even though every government for more than two decades has devoted significant effort to encouraging and helping startups. Industrial policy including SME or startup policy must simultaneously consider both supply- and demand-side factors. We have to identify unavoidable constraints at specific periods and strategically remove them, if possible. Government intervention at every phase of business is not plausible. The government must concentrate on solving problems that the market cannot solve.

Plenty programs and funds support early stage startups. Startups spend generally more than three years to produce and sell their product on the market. Subsequently, they need larger amounts of money to build production lines and marketing channels. Indeed, the greatest portion of startups encounter Death Valley just before and after the initial release of their product. Thus, the average size of startups in Japan and Korea remains very small and, following the launch of their products, they tend to become only SMEs. This is the main reason that the SME ratios are so high in these countries. Since becoming mature, large firms and entering the international market is very difficult, startups struggle to export their products and acquire foreign investment. Seoul has the highest percentage of B2C startups at 50%. Only 8% of customers for startups in Seoul come from outside of the country, which testifies to the daunting challenge Korean startups face in reaching the global market [7].

The Korean government should design effective support policies. Policymakers should provide a system that can select competitive and promising startups and give them a chance to receive sufficient funding to produce and build marketing channels for their products. If the government funds all startups, competitive and promising startups will remain the same size and be restricted to local market for a long time.

Startups can hire engineers in Seoul faster than anywhere else in the world, with a median time to hire of



15 days, compared to a global median of 41 days. “Seoul is competitive in that startups and entrepreneurs can easily find young, talented people from top-level engineers to designers and marketing specialists. Koreans have the highest level of education amongst OECD countries and a changing trend is that more qualified people are now willing to work for high-potential startups in place of traditional large firms.” Korea’s highly educated and well-trained work force is a competitive advantage for Korean industries including tech startups. Korean workers are ready to work in any position at any firm if they can expect to receive satisfactory monetary compensation and competitive benefits throughout their careers and into retirement [7].

The government increased the minimum wage 16.4% in 2018. It also announced continuous wage increases. Moreover, it reduced the legal working hours per week from 68 hours to 52 hours. This is critical for SMEs, especially startups, since members of startups must work more to reach the break-even point before their capital runs out. These two labor policies represent serious hurdles for every startup.

Even Gyunryung Sung, chairman of NRC, said in the emergency forum for innovative growth in August 2018 that the comprehensive planning capacities of Korea's innovative growth policies are significantly lower than those of the neighboring Chinese and Japanese governments. On the other hand, he said that China's Manufacturing 2025 and Japan's Society 5.0 (supersmart society) both center on education and technology design and development. Research also suggests that the government needs to recognize and support the role of large firms in innovation growth. Large firms need to play a role in developing innovative growth ecosystem by investing in venture businesses while leading technological development and supporting suppliers. President Jang of KIET said that we need to provide infrastructure for large firms that compete in global markets. However, the ideological approach of identifying large firms as the source of social inequality and realigning the economy to support small and

medium-sized firms in a short period of time is a dangerous idea. It could destroy the chain of value and the economic system.

## VI. CONCLUSIONS

The Moon administration’s startup policy is progressive but remains in the same sphere as the policies of previous governments. Korean startups continue to struggle because the Korean market, like Japan’s, is small and tightly closed. ICT Startup support policy should focus more on the second stage of product release. The new labor policy will make it much more difficult for startups to succeed.

Creating a boom in startup policy is necessary, but this should not be the final goal. It would also be more desirable if the booming of startups contributes to economic growth as well as better distribution. However, it is not desirable for the startup policy to put priority on reforming the economic structure and income distribution structure. It is unrealistic to seek economic development by reducing the share of large enterprises and focusing on small and medium-sized firms. In order for ICT startups and small businesses to grow sufficiently, it is important for them to establish a close value chain to secure competitiveness in the global market. The goal of the startup policy should be the continuous growth of the national economy and the expansion of employment. For this to happen, the establishment of fair trade and the strengthening of the startup ecosystem are important to foster a startup-friendly environment. Support policy with funding requires a shift in policy paradigm from general support to enhanced choice and focus. In addition, for the growth of startup companies, it is necessary to secure a bridgehead to advance into the global market, including technical cooperation with large companies and joint advancement overseas.

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