

KIBO ANNUAL REPORT

2017

KOREA TECHNOLOGY FINANCE CORPORATION

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2017 KOTEC Annual Report

KOTEC
the Leader of 4th Industrial Revolution



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CEO'S MESSAGE

“KOTEC will further its efforts to respond proactively to disruptive changes in the technology sector such as the 4th Industrial Revolution. As the institution that leads human-centered income-led and innovation-driven economic growth, KOTEC will be at the forefront of triggering the ‘Second Venture Boom’.”

First, I would like to take this opportunity to express our appreciation to all our partners and SMEs for their continued encouragement and support for KOTEC throughout the year 2017.

KOTEC has provided approximately 300 trillion Korean Won (KRW) in technology financing since its establishment to create new growth engines for the national economy. In that time, our company has diversified its support tools to best fulfill its role as the comprehensive technology financing institution in the nation.

The incumbent government has set forth a new direction in its policymaking, placing a strong emphasis on human-oriented income-led and innovation-driven economic growth and the resulting job creation thereof.

In sync with these new government policies, KOTEC is strengthening its commitment to triggering the growth of SMEs and business ventures beyond simply acting as a safety valve in the financial sector.

In 2018, we will commit over KRW20 trillion in credit guarantees, including 5 trillion in new guarantees, which we hope will help stimulate economic growth and create more job opportunities. The Job Stabilization Fund we operate will play a role as the priming water in promoting the job creation.

Furthermore, we will increase support for tech startups to a great extent, which would lead to a significant increase in job creation. We will also be reforming our social venture support system to promote shared growth and social economy.

In the meantime, we will double our efforts to nurture a bold startup culture by abolishing the third-party guarantee requirement and providing strengthened supports for business turnaround. Promoting startups is one of the most effective

ways to not only generate quality jobs but also create future national income source. It is also a future investment on the national level through which adventurous spirit can be instilled to young generation.

A major supporter for the tech-based businesses ventures and startups, KOTEC will exert its effort to increase youth employment, creating the social atmosphere where the society as a whole encourages young generations.

In 2018, in conjunction with the growth of the 4th Industrial Revolution, we will continue to explore new frontiers in technology and will implement new systems to innovate policy financing.

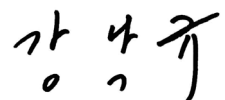
We have already launched new guarantee products, such as the Smart Factory Guarantee, to incubate tech enterprises leading the 4th Industrial Revolution, and have embarked on the development of big data-based artificial intelligence (AI) for better delivery of technology appraisal service.

Amidst the changes brought on by the ongoing 4th Industrial Revolution, entrance of a new administration and a new competent authority, we at KOTEC will continue our journey toward growth and opportunity creation, leading the job creation and economic recovery of the nation.

Again, we are deeply grateful for your continued affection and support for KOTEC and pledge our best efforts to discover and support technology startups so as to better contribute to the development of our national economy.

April 2018

Acting President /
Executive Vice President



INNOVATION

KOTEC leads Global Technology Finance,
Creating Value through Endless Innovation

01

Chapter 1 / Economic Trends

KOTEC has led the domestic technology finance market for the last 29 years from the very beginning when the idea of technology finance was completely new and unfamiliar to society. In this era where intangible asset-based technology finance is becoming a buzzword both at home and abroad, KOTEC is actively expanding its technology finance system overseas to establish its status as the global leader in the market.



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Overview

In 2017, the global economy saw solid improvements, buoyed by the economic stimulus policies of many of the major economies. This trend is projected to lead the growth of emerging economies and is expected to continue. In particular, the United States (US) economy showed improvements in market sentiment, riding on expansionary fiscal policies and public expectations for tax reform. As such, the US economy saw significant steady growth based on domestic consumption measured by capital investment and consumers. The Eurozone maintained stable growth as a result of consistent stimulus policies, the rebound made by the manufacturing industry and the ease in political uncertainties. The Japanese economy was also on a growth track as a result of its stimulus policies, increasing trade and improvements in employment rates.

China delivered mild growth led by the government's growth policies which, in turn, led to increased investments and exports. The other members of BRICS, the association comprised of Brazil, Russia, India, China and South Africa, are also expected to maintain their economic recovery rates. India's economy will be supported by wage increases and price stabilization which will in turn encourage household consumption and investment. Russia's economy will be supported by the stabilization of the domestic financial market and rising oil prices and Brazil's by improved external economic conditions and rising raw material prices. The World Bank (WB) expects advanced economies to grow by 2.2% and emerging economies by 4.5% in 2018.

Global Economic Outlook

Category	2016	2017 ^(e)	2018 ^(f)	2019 ^(f)
WB Global Economic Prospects (PPP) (IMF Economic Outlook)	3.2 (3.2)	3.7 (3.7)	3.7 (3.9)	3.7 (3.9)
Advanced Economies	1.6 (1.5)	2.3 (2.3)	2.2 (2.3)	1.9 (2.2)
US	1.5 (1.5)	2.3 (2.3)	2.5 (2.7)	2.2 (2.5)
Eurozone	1.8 (1.8)	2.4 (2.3)	2.1 (2.2)	1.7 (2.0)
Japan	0.9 (0.9)	1.7 (1.8)	1.3 (1.2)	0.8 (0.9)
Emerging Economies	3.7 (4.4)	4.3 (4.7)	4.5 (4.9)	4.7 (5.0)
China	6.7 (6.7)	6.8 (6.8)	6.4 (6.6)	6.3 (6.4)
India	7.1 (7.1)	6.7 (6.7)	7.3 (7.4)	7.5 (7.8)
Russia	Δ0.2 (Δ0.2)	1.7 (1.8)	1.7 (1.7)	1.8 (1.5)
Brazil	Δ3.5 (Δ3.5)	1.0 (1.1)	2.0 (1.9)	2.3 (2.1)

Key terms: PPP = purchasing power parity, e = estimate, f = forecast; Units: %
Source: World Bank (WB) 2018 Global Economic Prospects (Jan 2018), IMF World Economic Outlook (Jan 2018)

Global Economic Trends by Country

US

The US economy seems to be driven by export and private investment buoyed by the increasing profitability of the private sector. Private consumption, which was dampened by hurricane season, is now picking up and is largely driven by increasing demands for durable goods. The corporate tax cut set by the Trump administration is expected to further promote corporate investment and have positive impact on employment rates and wages. Expansionary fiscal policies, increases in investments, improved consumer sentiment, and good employment conditions will move the economy upward. Downward risks will be posed by increasing employment and slowing wage growth, growing global protectionism, and increasing pressures on imports.

Eurozone

The Eurozone economy is sustaining high growth rates backed by strong export demand resulting from the overall global economic recovery. Export growth translates into improving corporate profitability and thus increasing employment rates and consumption. Each country is set to maintain its stimulus policies and this trend may continue if domestic consumption takes off.

Japan

Both fiscal and monetary policies based on political support will maintain their momentum, which will in turn increase domestic consumption and export growth. However, the weakening impact of public investment and private consumption and growing pressures caused by labor shortage may negatively affect the economy.

China

China is expected to continue its stable economic growth driven by the recovery of the global economy, the growth in national wages, increases in purchasing power, the growth in investments and exports, and improvements in consumer sentiment. Strong growth in consumption will be driven by the operating profit growth of the nation's top 5,000 manufacturing companies (from 8.5% in 2016 to 22.8% in Sep 2017) and government policies aimed to increase consumption in poverty-stricken areas. However, SMEs are facing increasingly difficult conditions and government efforts to prevent housing bubbles will push down potential economic growth driven by the real estate market. In 2018, the economy is expected to grow by 6.4%, slightly lower than the 6.8% in 2017.

Other Emerging Economies

Commodity exporters, including Brazil and Russia, will maintain their economic recovery rates. The Russian economy was able to escape from its negative growth rates in 2017 thanks to rising oil prices and improvements in the domestic financial market. However, its momentum for further growth is weak due to the economy's slowing growth in exports and decreasing investments at home and abroad. The Brazilian economy is expected to continue its current growth trend as a result of external economic conditions and favorable commodity prices. Its economic recovery will be further bolstered by improving household purchasing power driven by decreasing inflation rates and the consumption-driven recovery pattern. However, the country is at risk of major issues such as social unrest.

India and ASEAN 5, the association comprised of Indonesia, Malaysia, Thailand, Vietnam and the Philippines, are all expected to see improved growth based on domestic consumption and exports. The Indian economy increased its economic growth rate to over 6%, and its household consumption will also increase due to by resuming investments, rising wages and stable prices. These changes are largely due to eases in policy uncertainties. The Indian economy is forecasted to resume its high growth track of over 7% in 2018.

Global Economy

Economic Indicators of Key Emerging Economies

Unit: %; Source: IMF World Economic Outlook (Oct. 2017)

Category	Growth Rate			CPI			Current Account Balance to GDP			Unemployment Rate		
	2016	2017 ^(e)	2018 ^(f)	2016	2017 ^(e)	2018 ^(f)	2016	2017 ^(e)	2018 ^(f)	2016	2017 ^(e)	2018 ^(f)
Saudi Arabia	1.7	0.1	1.1	3.5	△0.2	5.0	△4.3	0.6	0.4	5.6	-	-
Iran	12.5	3.5	3.8	9.0	10.5	10.1	4.1	5.1	5.9	12.5	12.4	12.4
UAE	3.0	1.3	3.4	1.8	2.1	2.9	2.4	2.1	2.1	-	-	-
Russia	△0.2	1.8	1.6	7.0	4.2	3.9	2.0	2.8	3.2	5.5	5.5	5.5
Brazil	△3.6	0.7	1.5	8.7	3.7	4.0	△1.3	△1.4	△1.8	11.3	13.1	11.8
India	7.1	6.7	7.4	4.5	3.8	4.9	△0.7	△1.4	△1.5	-	-	-

Global Economic Outlook

International Trade, Global Financial Market and Global Oil Prices

In 2017, the international trade volume increased by 4.5%, a significant improvement over the 1.5% recorded in 2016. This amount is expected to grow in 2018, driven by increasing external demands and rising oil prices resulting from the global economic recovery.

The US Treasury Bond rate also increased as key economic indicators improved, and the stock prices of both advanced and emerging stock markets went up overall. The global financial market is expected to remain bullish in 2018, buoyed by strong stock performances backed by expectations for US tax reforms. However, downward risks exist given the potential additional interest rate hikes of the US, Brexit negotiations and China's debt issue.

Global oil prices will hover around a low 50 dollars as both upward and downward risks play out, but overall prices will increase slightly as a result of growing demand. However, there are still supply-side uncertainties lingering, notably with respect to negotiations around production decreases. Upward risks include growing demand backed by economic recovery, the prolonged decrease in production and geopolitical risks faced by major oil producers. Downward risks include increases in US oil production (expected to reach a record high), among others.

Oil Price Outlook by Major Institutions

Category	Oil Type	2015	2016	2017	2018 ^(e)
IMF (Oct. 2017)	Dubai				50
KEEI (Nov. 2017)	Dubai	51	41	53	55
CERA (Dec. 2017)	Dubai				54
EIA (Jan. 2018)	Brent	54	45	54	60

Note: Forecast date is in parenthesis; Unit: USD/barrel; Source: Global Economic Trend by the Ministry of Strategy and Finance (Jan. 2018)

Key Issues

(1) US interest rate hike: The Federal Reserve (the Fed) of the US increased interest rates 3 times in 2017 as a result of economic recovery, as measured by employment growth and asset market boom, and plans further hikes in 2018 as a result of the corporate tax cut and the continued growth of the national economy.

(2) Brexit: The UK has initiated the first stage negotiations on the EU exit charge, the Ireland border issue and the question of EU citizens living in the UK (and vice versa). The second stage negotiations will address the transition time frame and will establish the UK's trade relations with the EU.

(3) Crypto Currency: Though the prices and creation of crypto currencies, such as Bitcoin, remain volatile, establishing policies to regulate the trade and usage of these currencies has become an increasingly critical issue in many countries. Russia and China have banned crypto currency transactions, and China has moved to shut down both currency exchange and currency mining companies, further increasing the volatility and risks involved in the market.

Overview

The domestic economy saw robust recovery in 2017 backed by the global economic recovery and improvements in business cycles driven by income-driven growth policies. In particular, the semiconductor industry which in the past led the economic growth of the country has once again been the leader in increasing capital investment, creating an export boom. Demand for storage are likely to remain strong thanks to public confidence in the 4th Industrial Revolution. The Korean economy is expected to maintain its recovery trends into 2018, buoyed by strong private consumption rates and the global economic recovery and semiconductor boom which have encouraged export and capital investment. While private consumption continues to improve due to increases in minimum wage, public employment rates and welfare spending, growth in capital investment is expected to significantly decrease as a result of the 2017 base effect and low investment in non-semiconductor fields. Construction investment will see a net decrease as the government continues to push forth its housing market stabilization policies.

Economic Outlook by Key Indicator

Category	2017			2018 ^(f)			2019 ^(f)
	1H	2H ^(e)	Annual ^(e)	1H	2H	Annual	Annual
Economic Growth	2.8	3.4	3.1	3.2	2.8	3.0	2.9
Private Consumption	2.1	2.8	2.5	2.9	2.5	2.7	2.7
Capital Investment	15.9	12.8	14.3	2.1	2.9	2.5	2.3
IP Investment	2.6	3.4	3.0	3.3	2.6	2.9	2.7
Construction Investment	9.4	5.4	7.2	△0.5	0.0	△0.2	△2.0
Export	4.2	3.0	3.6	3.0	4.2	3.6	3.5
Import	9.3	5.3	7.3	2.2	4.1	3.2	3.1

Note: Year over year (yoy), Unit: %, Source: Bank of Korea (BoK)



Key Indicators

Private Consumption

Private consumption in 2017 saw steady improvement as a result of the global economic recovery and positive consumer sentiment. It will remain robust in 2018 as a result of policies increasing job and household income, including increases in public employment, minimum wage and welfare. Policies have also been established to increase public housing supply and improve housing market stability, both of which will serve to improve private consumption. However, surging household debts and loan rate hikes will increase pressure on household interest payments. Furthermore, employment growth has not met government projections, leading to downward risks, such as lifetime income decreases and weakening consumer sentiment.

Private Consumption Outlook

2017			2018 ^(f)			2019 ^(f)
1H	2H ^(e)	Annual ^(e)	1H	2H	Annual	Annual
2.1	2.8	2.5	2.9	2.5	2.7	2.7

Note: yoy, Unit: %, Source: BoK

Capital Investment

Capital investment increased 14.3% year over year (yoy) in 2017, largely driven by the semiconductor export boom. This trend is expected to continue in 2018. However, the base effect of 2017 will significantly decrease the growth rate in 2018. Unlike in 2017 where capital investment growth was led by large corporations and the manufacturing industry, capital growth in 2018 will be led by SMEs. Given that the semiconductor industry contributed the most to the aggregate capital investment increase in 2017, a strong concentration risk exists. A decrease in the growth of the semiconductor industry would lead to a dramatic cut in the nation's total capital investment. Furthermore, public expectation and investments in the 4th Industrial Revolution are expected to play a critical role in future capital investment trends. Such investment has not been vibrant to date, but is forecasted to grow in 2018.

Capital Investment Outlook

2017			2018 ^(f)			2019 ^(f)
1H	2H ^(e)	Annual ^(e)	1H	2H	Annual	Annual
15.9	12.8	14.3	2.1	2.9	2.5	2.3

Note: yoy, Unit: %, Source: BoK

Construction Investment

Construction investment has maintained steady growth but is expected to be slow in 2018. Pre-purchased residential buildings have led such investment thus far, but weakening leading indicators in the construction industry, rising interest rates and tightening real estate regulations will suppress construction demand. Ever-decreasing Social Overhead Capital (SOC) investment will also negatively impact the construction industry. Civil construction will remain slow as a result of government budget cuts, and railway and road construction is expected to be sluggish as policies to increase the SOC budget will lead to declines in such investment.

Domestic Economy

Construction Investment Outlook

2017			2018 ^(f)			2019 ^(f)
1H	2H ^(e)	Annual ^(e)	1H	2H	Annual	Annual
9.4	5.4	7.2	△0.5	0.0	△0.2	△2.0

Note: yoy, Unit: %, Source: BoK

IP Investment

Intellectual Property (IP) investment will maintain its growth in 2018 as public awareness of the 4th Industrial Revolution grows. R&D investment will deliver modest growth mostly in the private sector, buoyed by strong IT sector performance, but this growth rate is expected to decline slightly. Public R&D will decrease as the government budget scales down, but the government is expected to increase software investment, particularly in the adoption of a Cloud system for public institutions. New tech-based software, particularly involving the Cloud and big data, will lead strong IP investment growth, but overall IT businesses may see some downward trends.

IP Investment Outlook

2017			2018 ^(f)			2019 ^(f)
1H	2H ^(e)	Annual ^(e)	1H	2H	Annual	Annual
2.6	3.4	3.0	3.3	2.6	2.9	2.7

Note: yoy, Unit: %, Source: BoK

Export and Import

Despite several negative factors, including increasing global protectionism, trade pressure from the US and retaliation by China in response to the Terminal High Altitude Area Defense (THAAD) system issue, 2017 saw increases in export as a result of the global trade recovery and the semiconductor boom. The semiconductor industry led the export boom with significant monthly growth rates, a trend which is likely to continue through 2018. However, this growth rate will be limited as a result of the base effect from 2017 and by increasing uncertainties over global oil prices. Imports of capital goods is expected to increase in 2018 as are capital investments. Consumption of consumer goods will also increase as a result of improving private consumption rates.

The US economy, which saw significant increases in investment thanks to corporate tax cuts, will take the lead in the overall upward trend of the global economy in 2018. The Eurozone and Japan will also maintain steady growth while China will return to a 6% growth rate. Increasing demand from advanced and key economies will drive also growth in emerging economies. However, risks, such as wage and price increases and difficulty to further increase employment, may slow down growth rates from the second half of 2018 and onwards.

South Korea's domestic economy is expected grow 3.0% in 2018 as a result of the overall global economic growth, the semiconductor boom and improving private consumption. Government policies to create public sector jobs, increase minimum wage and expand the welfare system will facilitate economic growth, though the high concentration of investment on the semiconductor industry may undermine growth. Exports are expected to remain robust, as a result of the positive global economy.

Growth Contribution by Key Indicator

Unit: %, Source: BoK

Category	2015	2016	2017 ^(e)	2018 ^(e)
GDP	2.8	2.8	3.1	3.0
Export	0.2	0.5	0.4	1.2
Domestic Consumption	2.6	2.3	2.7	1.8



CHALLENGE

KOTEC is your partner in your journey to success

02

Chapter 2 / SMEs and Venture Business Trends

Despite concerns over the prolonged period of low growth and external uncertainties beginning in 2012, the Korean economy has continued to recover at a steady pace backed by the strong performance of its exports and stable prices of domestic goods and services. During this time, KOTEC has created new growth engines for the economy by focusing on technology enterprises, including venture businesses, inno-biz enterprises and technology startups. KOTEC has lived up to its mandate as the leader in technology finance by increasing the number and value of its technology guarantees and by actively seeking out innovative SMEs to grow and support.



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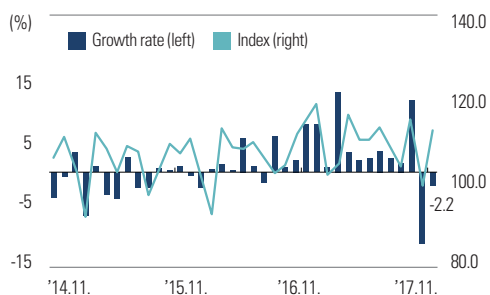
Small and Medium Enterprises (SMEs)

01

SMEs, both domestic (service) and export (manufacturing), increased overall in 2017 backed by government policies at home and the global economic recovery abroad. Employment rates have also increased, indicating that SME employment will grow in 2018. In addition, government policies to promote the income-driven growth and a transition to an SME-centered economy will further bolster SME growth. However, minimum wage increases and interest rate hikes may undermine SME job creation and financing conditions.

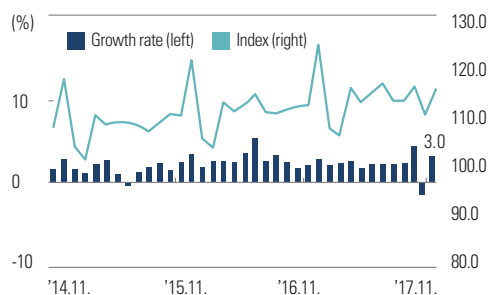
The rise in manufacturing SMEs declined slightly overall except in fields such as electronic components and machinery. In contrast, service SMEs saw mild recovery on the back of increases in wholesale, retail, finance and insurance businesses.

Trends in Manufacturing Industry Production Index and Growth Rate



Source: Statistics Korea, Korea Small Business Institute (KOSBI)

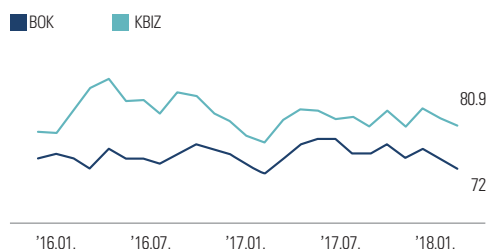
Trends in Service Industry Production Index and Growth Rate



Source: Statistics Korea, KOSBI

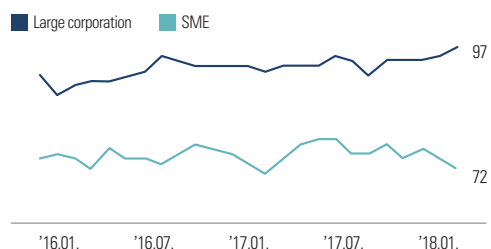
Overall SME financing conditions became less favorable in 2017 as a result of rising interest rates caused by US interest rate hikes and wage increases. Prime loans were primarily concentrated on blue chip corporations. As a result, competition between financially struggling SMEs intensified. The low profitability and weak payability of SMEs further aggravate the already-poor SME financing conditions.

SME Financing Outlook



Source: BOK, KBIZ and KOBIS

BSI: Financing Outlook by Business Size



Source: BOK and KOBIS

As per the Act on Special Measures for the Promotion of Venture Businesses, the government has certified companies with proven technology competitiveness and strong growth potential as venture businesses, and has provided tangible and intangible benefits, including funding, technology, human resources, and business location, in order to promote the development of growth engines. Since the introduction of the venture business certification system in 1998, the number of certified ventures exceeded 10,000 in July 2001 for the first time. In April 2004, the government established various venture promotion policies and in June 2006, it made several reforms in the venture business certification system, which re delegated authority over venture certification to the private sector, primarily to businesses such as KOTEC, the Small & Medium Business Corporation (SBC), and the Korean Venture Capital Association (KVCA). As a result of these actions, the number of certified ventures in the market grew to 15,000 in 2008.

In April 2010, the Korean government eliminated the requirements for technology appraisal guarantees from financially sound firms. Under the new system, such firms are allowed to apply for venture certification based solely on the estimated amount of credit guarantees to be given, instead of the actual guarantee provisions. With this revision, the number of certified ventures continued to grow, reaching 35,282 at the end of 2017, after hitting 20,000 in May 2010.

Despite the domestic economic downturn in the midst of a series of turbulent events, including the Eurozone crisis and the sluggish growth of major economies following the global financial crisis, the number of certified venture businesses continued to proliferate. This can be ascribed to SMEs' improved capability in technological innovation encouraged by KOTEC's credit guarantee scheme which requires, among other things, technological competence. It is also attributable to an increase in demand for the certification which would enable the SMEs to apply for government supports, including grants and subsidies.

Annual Growth of Venture Businesses

Category	2009	2010	2011	2012	2013	2014	2015	2016	2017
No. of Businesses	18,893	24,645	26,148	28,193	29,135	29,910	31,260	33,360	35,282

Source: Venture-In

From among the venture businesses, 69.3% belong to the manufacturing sector and 16.5% to S/W.

Breakdown of Venture Businesses

Category	Manufacturing	IT Processing and S/W	R&D and Service	Others	Total
No. of Businesses (%)	24,451 (69.3%)	5,804 (16.5%)	452 (1.3%)	4,575 (12.9%)	35,282 (100%)

Source: Venture-In, as of 2017 year-end

Venture Businesses

In terms of regional distribution, 57.8% of venture businesses are based in the Seoul metropolitan area (Seoul, Gyeonggi, and Incheon), which reflects the fact that companies with strong technological competence are still concentrated in the area.

Regional Distribution of Venture Businesses

Category	Gyeonggi	Seoul	Daegu/ Gyeongbuk	Busan/ Ulsan	Daejeon/ Chungnam	Gyeongnam	Incheon	Gwangju/ Jeonnam	Others	Total
No. of Businesses (%)	10,653 (30.2%)	8,180 (23.2%)	3,394 (9.6%)	2,738 (7.8%)	2,609 (7.4%)	1,871 (5.3%)	1,544 (4.4%)	1,587 (4.5%)	2,706 (7.7%)	35,282 (100%)

Source: Venture-In, as of 2017 year-end

Venture firms grew not only in quantity but also in quality. Despite deteriorated managerial environments resulting from worldwide economic downturn, 513 venture firms delivered over KRW 100 billion in sales in 2017 (based on the 2016 financial closing), up 8.2% (39 firms) from the previous year.

Growth of KRW 100 Billion Venture Firms

Year (Fiscal year)	2009 (2008)	2010 (2009)	2011 (2010)	2012 (2011)	2013 (2012)	2014 (2013)	2015 (2014)	2016 (2015)	2017 (2016)
No. of Businesses	202	242	315	381	416	454	460	474	513

Of the 513 venture firms with over KRW 100 billion in sales as of 2017 (according to the Ministry of SMEs and Startups (MSS)), KOTEC provided 426 of the firms with KRW 2,707.5 billion in new guarantees, of which 394 firms (81.9%) had graduated from the guarantee program and 77 (18.1%) maintained KRW 175.6 billion in guarantee balances.

Guarantee Support for KRW 100 Billion Venture Firms

Unit: No. of businesses, KRW 100 million

Category	Graduated from Guarantee		Businesses under Guarantee		Total	
	No. of Businesses	New Guarantee Provided	No. of Businesses	New Guarantee Provided	No. of Businesses	New Guarantee Provided
Guarantee (%)	349 (81.9%)	20,133 (74.4%)	77 (18.1%)	6,942 (25.6%)	426 (100%)	27,075 (100%)

()* refers to guarantee balances.

Of the KOTEC-guaranteed firms, 221 are publicly listed: 33 had already been listed at the time of initial guarantee provision, 133 went public during the guarantee period, and 55 went IPO after the guarantee contracts were terminated. These numbers epitomize the impact of the KOTEC guarantees on the growth and maturity of venture firms.

KOTEC will continue to do its utmost to provide technological financing to help identify and cultivate new ventures capable of bringing new growth engine and to ensure their sustainable growth.

One of the most imminent challenges at hand is the task of fostering tech-oriented and innovative SMEs which are able to lead the national economy and help it to proactively cope with rapidly-changing technological trends in the era of globalization. In 2001, the government established its “Plan for Identifying and Cultivating Innovative SMEs” under the SME Technology Innovation Promotion Act and implemented supplementary policies to designate SMEs with strong technological capabilities and growth potential as Inno-Biz enterprises. This was done to provide these SMEs with comprehensive support through technological funding and marketing, with the hopes of transforming the SMEs into competitive global players.

With strong backing from the government and relevant institutions, 18,091 Korean SMEs have been certified as Inno-Biz enterprises through KOTEC’s technology appraisal system as of the end of 2017.

Annual Trends in Inno-Biz Certification

Category	2009	2010	2011	2012	2013	2014	2015	2016	2017
No. of Businesses	15,939	16,243	16,944	17,298	17,080	16,878	17,472	17,708	18,091

Source: The Ministry of SMEs and Startups (MSS)

Breakdown of Business Categories

Category	Machinery	Electronics & Electricity	S/W	IT	Chemical	Others	Total
No. of Businesses (%)	4,814 (26.6%)	3,370 (18.6%)	1,310 (7.2%)	1,119 (6.2%)	1,239 (6.8%)	6,239 (34.0%)	18,091 (100%)

Source: MSS as of 2017 year-end

Regional Distribution

Category	Gyeonggi	Seoul	Daegu/ Gyeongbuk	Busan/ Ulsan	Daejeon/ Chungnam	Gyeongnam	Incheon	Gwangju/ Jeonnam	Others	Total
No. of Businesses (%)	6,068 (33.5%)	3,209 (17.7%)	1,778 (9.8%)	1,251 (6.9%)	1,223 (6.8%)	1,274 (7.0%)	1,042 (5.8%)	816 (4.5%)	1,430 (7.9%)	18,091 (100%)

Source: MSS as of 2017 year-end

PASSION

KOTEC guarantees a brighter future for you supported by our steadfast dedication to your success

03

Chapter 3 / KOTEC's Business Performance

KOTEC leads the technology finance industry based with its excellent technology appraisal system and highly skilled specialists. We have continued to improve our system to proactively address the rapid and innovative developments in technology and convergence. With our unique expertise, we are able to discover and support technology startups and SMEs that have not benefited from other financial institutions due to their lack of financial records or guarantee. Moving forward, KOTEC will continue to support high value technology SMEs and venture businesses so that they can secure necessary resources and investments. We stand by our position as a reliable partner for entrepreneurs in their pursuit of their dreams.



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Roles and Responsibilities

Since its foundation in 1989, KOTEC has been playing a pivotal role in leading the technology financing sector and enhancing technology competitiveness of Korean SMEs by providing about KRW 323 trillion in credit guarantee to tech-oriented SMEs whose commercial viability is high but whose access to credit is limited due to insufficient collateral capacity. KOTEC has also built a comprehensive technology financing platform, as it has been beefing up its support for innovative SMEs including tech startups with growth potential, Venture Businesses, and Inno-Biz enterprises and has extended its service coverage to technology and management consulting as well as equity investment linked with technology appraisal.

Intensive supports for the SMEs with high technological competence became possible thanks to the technology evaluation system of KOTEC, which evaluates future value of intangible assets such as intellectual properties possessed by SMEs. In order to help create quality job opportunities, KOTEC provided extensive supports for SMEs with high growth potential such as tech startups. In particular, KOTEC has increased financing for R&D and commercialization activities, launched its KOTEC Technology Matching System (KTMS) to link technology supply and demand, and participated in the Tech Credit Bureau (TCB) as the sole representing member from the public sector. All of these efforts have contributed to the creation and development of a new growth engine behind the national economy and to the advancement of the technological competitiveness of Korean SMEs.

KOTEC will continue to focus its support on innovative SMEs and startups and help them grow into competitive players in the global market by providing various services tailored to different growth stages. It will also expand its dynamic demand-driven services so that its technology assessment data is widely utilized by both the public and private sectors. It further aims to build the growth momentum driving the creative economy.



Purpose of Establishment

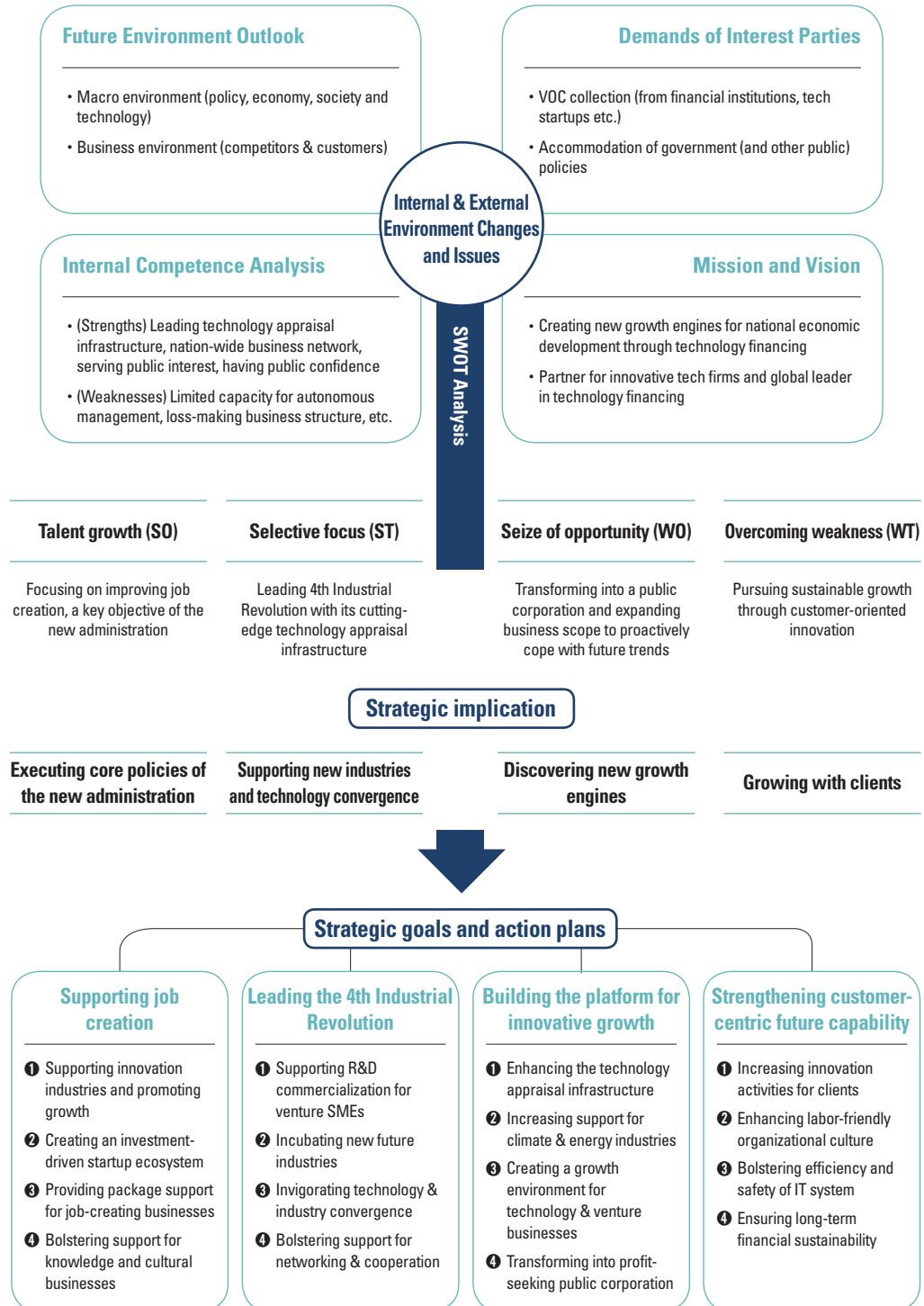
- ① To facilitate the financing of new technology businesses and further contribute to the development of the national economy by stabilizing and developing the technology credit guarantee system. <The Korea Technology Credit Guarantee Fund Act Article 1>
- ② To enable funds more readily available for enterprises which lack security solvency by guaranteeing the liabilities which may be incurred by such enterprises. <The Korea Technology Credit Guarantee Fund Act Article 12>

Major Milestones

<p>1989. 04.</p> <p>The corporation was founded (The credit guarantee fund of KOTEC was first established in December, 1986)</p>	<p>1997. 03.</p> <p>Opened the Technology Appraisal Center (the first of its kind in Korea)</p>	<p>1999. 02.</p> <p>Implemented the technology appraisal guarantee system (Due diligence for the guarantee decision is conducted based on the technology evaluation)</p>	<p>2005. 07.</p> <p>Developed the new KIBO Technology Rating System (KTRS)</p>
<p>2006. 06.</p> <p>Designated as the authority to certify Venture Businesses</p>	<p>2007. 01.</p> <p>Integrated credit guarantee products into the technology appraisal guarantee scheme (The credit analysis scheme centered on financial risks was abolished)</p>	<p>2011. 05.</p> <p>Relocated Headquarters to Munhyeon International Financial Complex in Busan</p>	<p>2012. 06.</p> <p>Legislated guarantee-linked equity investment as a proprietary business</p>
<p>2015. 01.</p> <p>Established the technology transfer and commercialization support system (Operation of Technology Convergence Center and KTMS)</p>	<p>2016. 09.</p> <p>Changed its legal name (Korea Technology Credit Guarantee Fund → Korea Technology Finance Corporation)</p>	<p>2017. 07.</p> <p>Competent authority changed (Financial Services Commission → Ministry of SMEs & Startups)</p>	<p>2017. 12.</p> <p>Provided a total of KRW 323 trillion in guarantees and KRW 21.9 trillion in guarantee balance to 75,000 recipient firms</p>

Overview

Vision and Strategy



Fundamental Property and Leverage Ratio

KOTEC is a special-purpose financial institution specialized in technology financing. The institution was established to help create a growth engine for the national economy by providing financial support to technology SMEs. KOTEC's fundamental property refers to its financial resources committed to the operation of the credit guarantee service, the core business of KOTEC aimed at facilitating innovative SMEs' access to credit. The fundamental property, or the equity capital of KOTEC, can also be characterized as reserves for claim payments. Its sources primarily come from the government and financial institutions.

Article 13 of the Korea Technology Finance Corporation Act (Acquisition of Fundamental Property)

① The fundamental property of the Corporation shall consist of the following:

1. Contributions from financial companies, etc.
2. Contributions from the government
3. Contributions from persons other than those referred to in subparagraph 1 and 2

The contributions from the government are transferred from the government's General Account to KOTEC with an aim to facilitate the access to financing for tech SMEs' with weak collateral capacities. The contributions are provided to KOTEC every year directly from the government's fiscal budget (KRW 40 billion, KRW 80 billion and KRW 50.8 billion in 2015, 2016 and 2017, respectively). It is regarded as a form of government's expenditure which is made to provide the credit guarantee, a public good dedicated to fostering technology SMEs and startups.

The contributions from the financial institutions can be characterized as a price (fee) they pay in exchange for the following benefits they receive by participating in KOTEC's credit guarantee scheme: decrease in the costs of creditworthiness analysis and tech data acquisitions, decrease in the amount of bad debt provision thanks to reduction of risks associated with lending. It can also be viewed as a quasi-tax which is levied for the support of SMEs. Financial institutions contribute an amount calculated by $1.35 \pm$ differential rates (0.02) over 1,000 of the average monthly balance of their corporate loans, and new technology financing companies contribute $3/1000$ of the average quarterly balance. Some financial institutions under special agreements with KOTEC make special contributions accordingly.

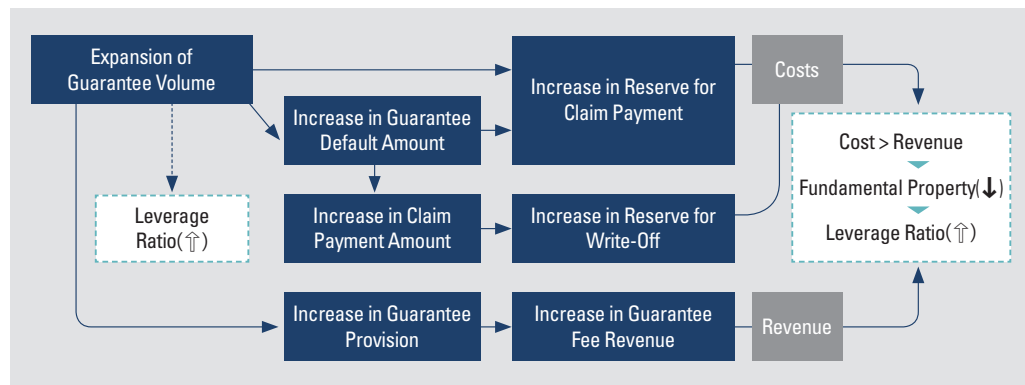
The fundamental property is used to meet guarantee demands and ensure continuous provision of guarantee supports. It is also the capital base necessary to ensure credibility of the credit guarantee scheme in its ability to respond to the claims for guarantee submitted by financial institutions. It is stated that the funds raised by contributions and profits made through guarantee fees, penalties, and interest must first be spent to make claim payments and operate KOTEC, while the remaining funds are to be deposited into financial institutions; used to purchase state, local government bonds, or other bonds guaranteed by the central government, local governments, or financial institutions; used to purchase stocks (including investment certificates), debentures or other securities; or otherwise used in similar processes necessary to achieve KOTEC's purposes. <Article 44 of the Korea Technology Finance Corporation Act>

In 2017, KOTEC made significant efforts to increase its capital base by engaging with external parties and by securing an additional contribution of KRW 42.3 billion. Nevertheless, its fundamental property declined by KRW 203.1 billion from the previous year-end to KRW 1,972.2 billion. This was a result of the abolition of the third-party guarantee requirement, the decrease in interest revenue due to low interest rates, the increase in claim cases from increasing defaults and the high costs of claim payment (e.g. costs of write-offs and reserves for claim payment) caused by guarantee balance increases (of KRW 600 billion).

General Information

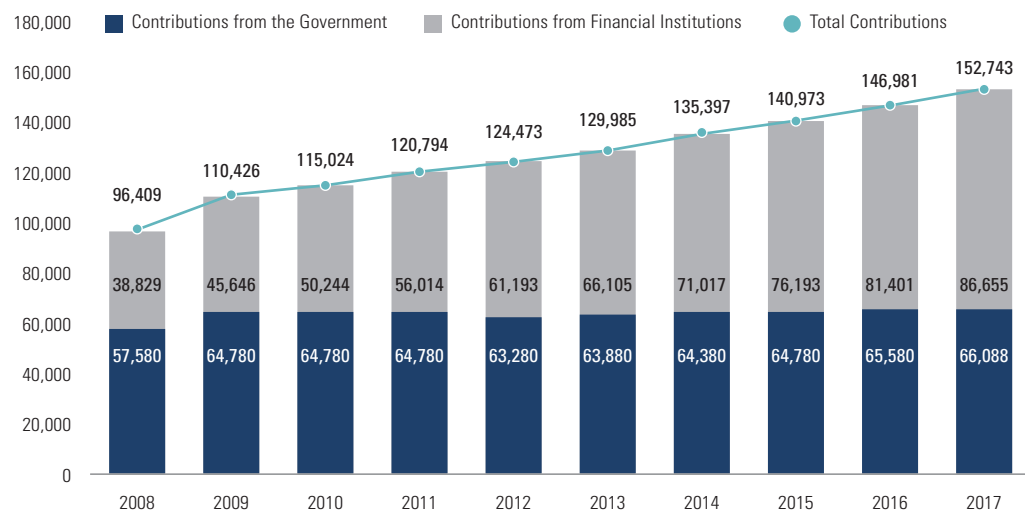
The leverage ratio refers to a ratio of guarantee utilization, which is calculated by dividing the credit guarantee volume by the fundamental property at a given point. It is used as the main indicator for measuring the company's ability to meet the payment claims without delay and the guarantee supply capability to meet government policy requirements and the demand for guarantees. The ratio changes dynamically in accordance with the guarantee balance, default rate, claim payment, and fluctuations in contributions from the government and financial institutions. The leverage ratio plays an important role in maintaining sustainability of KOTEC's credit guarantee scheme by setting an upper limit of the total guarantee extension, as well as in ensuring the multiplier effect, which is the greatest advantage of the credit guarantee schemes. Article 23 of the Enforcement Decree of the Korea Technology Finance Corporation Act sets the upper limit of the leverage ratio at 20 times the sum of the fundamental property and retained earnings carried forward. KOTEC maintained a ratio of 11.1 times the sum in 2017.

Changes in Fundamental Property and Leverage Ratio following Increased Guarantee Volume



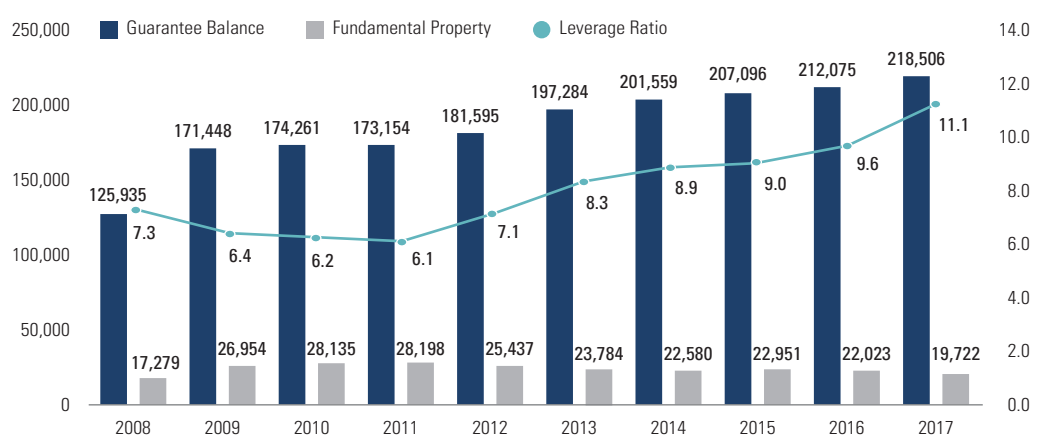
Accumulated Contributions over the Last Decade

Unit: KRW 100 million



Key Operating Results of the Last Decade

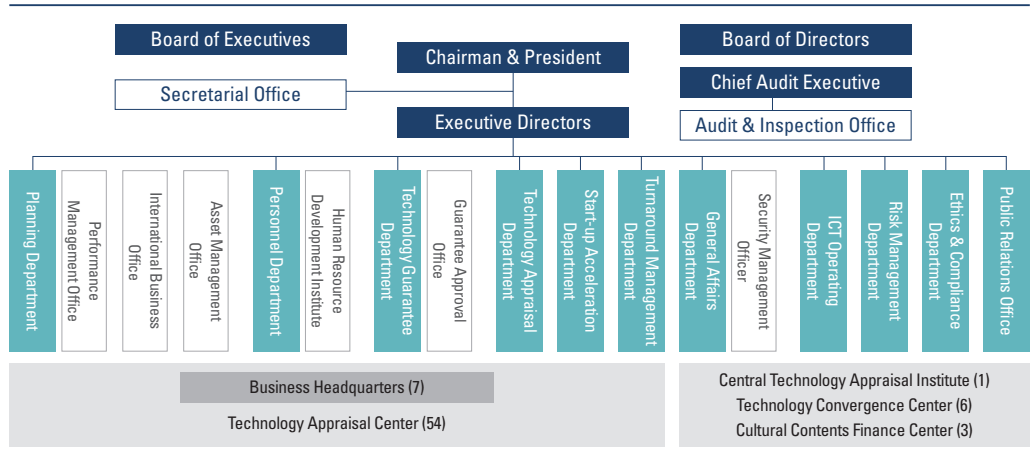
Unit: KRW 100 million, Multiples



Organization and Human Resources

With respect to the organizational structure of its Head Office, KOTEC carried out a partial adjustment of functions among its departments and offices in order to enhance its capability to deliver its core services. Guarantee approval function was separated from the Technology Guarantee Department which is now responsible for the planning and operation of the credit guarantee scheme. Supplementary functions related with employee education function were also integrated. To establish core competency in knowledge and cultural content businesses, KOTEC established Cultural Contents Finance Centers in Seoul, Gyeonggi and Busan.

Organizational Chart



As of the end of 2017, KOTEC consisted of a head office (comprised of 10 departments and 2 offices) and its branch network (comprised of 1 Central Technology Appraisal Institute, 6 Technology Convergence Centers, 3 Cultural Contents Finance Centers, 7 Business Headquarters, and 54 Branches). Its staff was comprised of 1,211 people, including 7 executives and 119 special service officers under separate contracts.

Personnel Composition

Unit: persons

Category	Executives	1st Grade	2nd Grade	3rd Grade	4th Grade	5th Grade and below	Special Service Officers	Total
Headcount	7	21	85	243	441	295	119	1,211

General Information

Major Operations, etc.

The major services of KOTEC are comprised of core services, i.e. credit guarantees, technology appraisal, guarantee-linked equity investments, and claim management; and supplementary services, i.e. business consulting and technology innovation support. The detailed description of these services is as follows.

Major Operations

Category		Description	
Core Services	Credit Guarantee	Guarantees for liabilities assumed by tech SMEs, including new technology businesses, from financial institutions to start their businesses and develop and/or commercialize their technologies * New guarantees are no longer provided to companies that do not fall under the category of new technology businesses (as of Aug. 2004)	
		Tech Startup Guarantee	Guarantees for tech startups less than seven years old
		Tech Innovation Guarantee	Guarantees for SMEs with excellent technologies such as Venture Businesses and Inno-Biz Enterprises, SMEs engaging in new growth engine/new and renewable energy/knowledge-based service industries
		Technology Appraisal Guarantee	Guarantees for companies with excellent technologies based on the technology appraisal of intangible technologies and knowledge that the companies retain
	Technology Appraisal	Appraises future values of the technology that a company retains by analyzing technological competency, marketability and commercial viability, and uses the appraisal results for various purposes in technology financing support	
		Technology Valuation	Appraisal of values that are being realized or can be realized in the future by the corresponding technology
		Technology Project Viability Assessment	Assessment of technological competence and feasibility of the corresponding technology project when a company is commercializing a specific technology or idea or expanding investment into current technology business
	Comprehensive Technology Appraisal	Comprehensive appraisal of all technologies that the company retains in connection with the company's mission; technologies include the management environment and business prospects	
	Guarantee-linked Inv.	Provides direct equity investment in conjunction with a preceding credit guarantee program for early-stage technology firms with distinguished commercial viability - Purchase of Common Stocks, Preferred Stocks, CB, BW	
Mgt. of Claims	Exercises legal or contractual right to indemnity against credit guarantee debtor when default is incurred until the indemnity right is duly expired. - Pursuing legal procedures (auctions and lawsuits) and encouraging induced redemptions - Expanding the support into helping credit recovery and business restart of honorable failures		
Supplementary Services	Management Consulting and Technology Advisory	Management and technology consulting to improve efficiency and competitiveness - Business and technology diagnosis and consulting, startup education and training, sales channel development, mentoring, restructuring and M&A, etc.	
	Technology Innovation Support	Certification of Venture Businesses & Inno-Biz Certification of Green Technology & Green Enterprise	

KOTEC provides guarantees preferentially for innovative technology enterprises with growth potential; and specifically designates Venture and Inno-Biz Enterprises, technology startup enterprises, and excellent technology enterprises producing new growth engines to provide them with preferential technology financing. KOTEC also establishes specific goals (quota) for different categories to support technology startups, new growth engine businesses and R&D invigoration to further drive future economic growth.



Key Clients

- **Venture Businesses** with high risks and high returns, unlike traditional SMEs
- **Inno-Biz Enterprises** with competitive strengths based on their technological edge
- **Technology startups** with the capacity to create jobs and expand growth potential
- **R&D enterprises** with excellent technologies and goals of pursuing commercialization
- Enterprises retaining excellent technologies such as **new growth engine** industries including green technology and advanced convergence industries, **promising future industries (6T)**, and the knowledge-based service industry



Venture Business

- **Tech-intensive SMEs seeking business opportunities with new and advanced technologies and ideas**
- **Types of Venture Businesses**
 - Enterprises that receive technology appraisal guarantee or R&D loans
 - R&D enterprises
 - Enterprises receiving equity investment from venture capitals



Inno-Biz Enterprise

- **Inno-Biz is a term derived from “Innovation” and “Business”, referring to an innovative firm that retains competitive edge based on their prominent technologies**
- **Requirements to be certified as an Inno-biz Enterprise:**
 - Enterprises that have been in operation more than three years and obtain 700 or higher points in the technology innovation system evaluation and B or higher in the technology project rating system in KOTEC

Overview

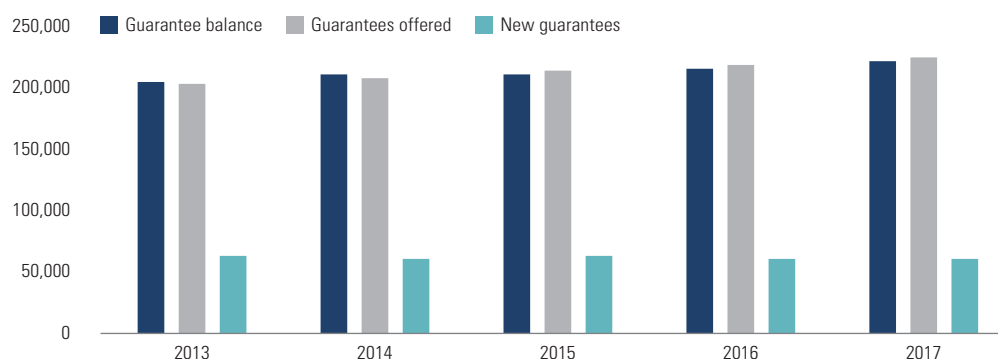
The global economy in 2017 is still under prolonged uncertainties as the US economy walks a fine line between recovery and another slowdown. This uncertainty stems from interest rate hikes which were made as part of the strategy to exit from quantitative easing (QE) by the US government. The domestic South Korean economy also slowed as a result of weakening exports and demands. During this time, KOTEC worked to fulfill its responsibilities as a specialized technology financing vehicle to promote job creation and develop a new growth engine with the goal of re-invigorating the slowing economy. In particular, KOTEC expanded its work scope despite limited guarantee resources. It focused on improving the competitiveness of tech-startups and provided intensive support for the expansion of future growth engines. KOTEC also drove technology appraisal demands, including the TCB, by advancing its technology appraisal infrastructure and expertise, and led the globalization of its technology appraisal business by participating in the government-led Knowledge Sharing Program (KSP). In addition, the organization tightened its risk management practices and carried out systematic collection of claims to stabilize its capital base.

A. Credit Guarantee

KOTEC pushed forward with structural improvements for marginal businesses that received long-term guarantees in large amounts in order to prevent the deterioration of guarantees and to efficiently distribute guarantee resources while intensifying guarantee support for technology startups and new growth engine industries. The volume of total guarantees provided amounted to KRW 21.9 trillion in 2017, a KRW 600 billion increase from the previous year.

Size of Credit Guarantees

Unit: KRW 100 million



Category	2013	2014	2015	2016	2017
Guarantee balance	197,284	201,559	207,096	212,075	218,506
Guarantees offered	196,591	200,781	209,804	216,183	222,555
New guarantees	60,184	53,489	58,046	53,098	52,859

In addition, KOTEC identified three key areas with the greatest potential for job creation—technology startups, new growth engine industries, and R&D financing—and concentrated its guarantee support on these areas, helping them alleviate their credit constraints.

Guarantee Supply for Three Major Support Areas

Unit: KRW 100 million

Category	2015	2016	2017	
			Plan	Actual
Technology Startups	103,333	104,666	90,000	107,878
New Growth Engine Industries	70,812	66,580	60,000	69,453
R&D Financing	34,257	41,937	42,000	48,348

- **Technology Startups**

New technology businesses within a five-year span since foundation

- **New Growth Engine Industries**

Companies manufacturing products or having the relevant technologies in 17 industries of three 3 areas as designated by the government

- **R&D Financing**

Providing tailored support for different stages of R&D
(Development - Pre-commercialization - Commercialization)

B. Technology Appraisal

Technology appraisal refers to a process where intangible assets or technology projects are assessed in terms of their technological competence, marketability, and commercial viability, and the results of assessment are expressed in amounts, ratings, points, and opinions. Since its first technology appraisal, conducted in March 1997, the number of appraisal cases by KOTEC have steadily increased every year to a total of 617,448 as of 2017, with the accumulated appraisal fees amounting to KRW 330 billion. KOTEC's technology appraisal service has served as an effective tool to provide future-value-based funding, assess the potential value, the technological strengths and growth potential, feasibility of commercialization, and intangible asset values of a technology. The goal of this system is to effectively support the government's SME technology innovation policy.

Scope of Application for KOTEC's Technology Appraisal System

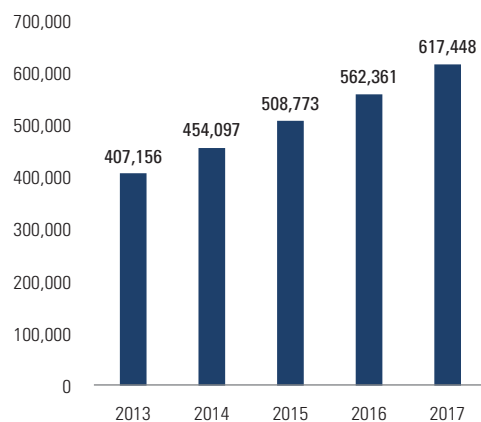
Future Value Oriented Funding Support	Assessment of Technological Competence and Growth Potential	Assessment of Commercial Viability of Developed Technology	Valuation of Intangible Assets (e.g. Patents)
<ul style="list-style-type: none"> • Technology Appraisal Guarantee • Technology-Based Credit Loan • Guarantee-linked Investment 	<ul style="list-style-type: none"> • Certification of Venture Businesses • Certification of Inno-Biz • Certification of Green Technology 	<ul style="list-style-type: none"> • R&D Support Appraisal • R&D Economic Viability Appraisal 	<ul style="list-style-type: none"> • Technology Transfers and M&A • Investment in Kind • Pledging Patents as Collateral

Performance of Major Operations

Technology Appraisal Status

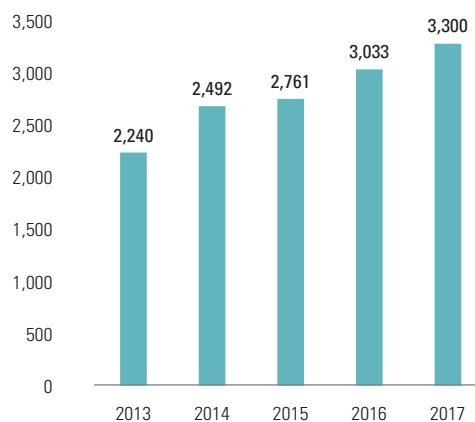
Technology Appraisal Cases (Cumulative)

Unit: Cases, KRW 100 million



Technology Appraisal Fees (Cumulative)

Unit: Cases, KRW 100 million



Category	2013	2014	2015	2016	2017
Technology Appraisal Cases	45,414	46,941	54,676	53,588	55,087
Cumulative	407,156	454,097	508,773	562,361	617,448
Technology Appraisal Fees	242	252	269	272	266
Cumulative	2,240	2,492	2,761	3,033	3,300

C. Default and Claims Management

KOTEC has been exerting its best efforts to keep the default rate under control via constant follow-up monitoring, restructuring and failure prevention programs. As a result of this efforts, the default rate has been stabilized, closing at 4.5% in 2017.

Default Amount & Rate

Unit: KRW 100 million, %

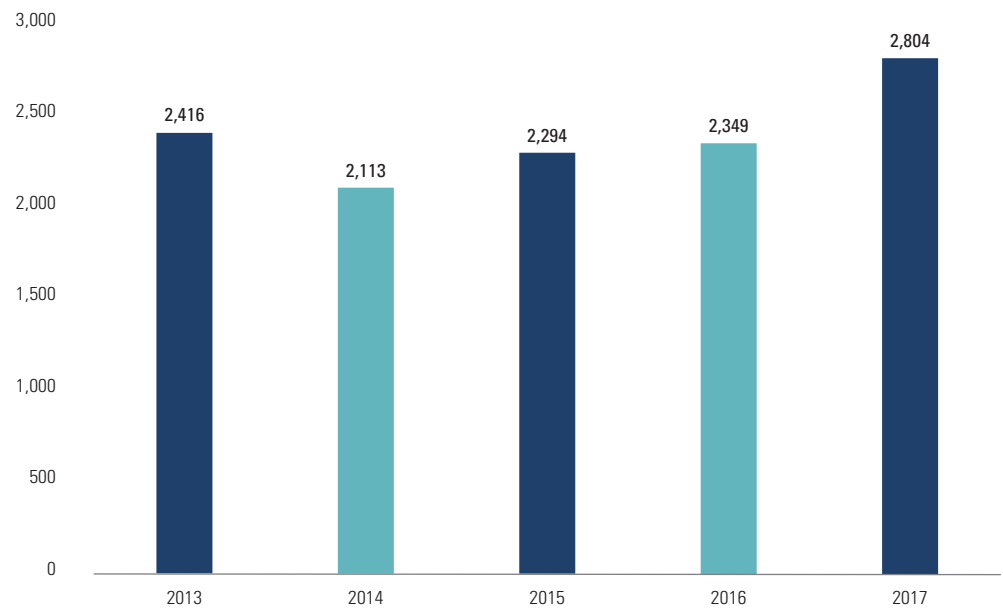
Category	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Yearly default amount	7,679	7,420	8,184	8,715	9,026	7,551	8,802	8,457	9,325	9,899
Default rate	6.1	4.3	4.7	5.0	5.0	4.0	4.4	4.1	4.4	4.5

* Including P-CBO Guarantee

In accordance with the government's policy direction, KOTEC beefed up its programs for failure prevention and turnaround assistance. The conditions for the recovery of claims are ever worsening because of the increase in the debt relief and bankruptcy filing and decrease in the number of the co-guarantors. Amid this negative work environment, KOTEC tried to maximize the amount of claim collection by employing various debt collection measures as follows: intensification of the efforts to identify new collectible claims, execution of claims collection strategies differentiated by debtors, and use of information held by public institutions on a regular basis. In the meantime, it also sold uncollectible claims to the Korea Asset Management Corporation in order to improve the efficiency of claims collection.

Recovery of Claims by Year

Unit: KRW 100 million



Category	2013	2014	2015	2016	2017
Balance of Claims	18,594	19,076	19,719	20,762	20,938
Claims Recovered	2,416	2,113	2,294	2,349	2,804

Performance of Major Operations

Credit Guarantee

A. Credit Guarantee Support

Total credit guarantee support

Fulfilling its role as a public financial institution specializing in technology financing, KOTEC provided stable credit guarantee support for tech SMEs and helped them overcome the financial constraints triggered by uncertainties surrounding the economic cycle. KOTEC also worked to help technology-innovative SMEs prepare stable growth and effectively secure strong economic competitiveness necessary for a fresh takeoff.

In 2016, with the provision of credit guarantees worth KRW 22.3 trillion, KOTEC responded to SMEs' financing needs in a timely manner, employing the strategy of 'selection & concentration'. Among other things, credit guarantee extension was offered to new growth engine industries and technology startups. Its guarantee balance amounted to KRW 21.9 trillion, up 643.1 billion from the previous year.

In order to boost the economy and drive job creation, KOTEC concentrated its support on SMEs with strong job creation potential, innovative technology enterprises capable of creating new growth engines, and export-oriented SMEs. KOTEC's support for these businesses accounted for 95.9% of its total guarantee balance. KOTEC also issued P-CBOs worth KRW 260.9 billion to divert SME loans from the indirect financing market to the direct financing market.

Improving the guarantee support system for technology startups and venture enterprises

KOTEC has concentrated its guarantee support capabilities on technology startups and venture enterprises, both of which are expected to drive future growth engines of the national economy and to have significant impacts on job creation. In particular, KOTEC's guarantee extension for startups is continuously on an upward path.



Annual Guarantee Support

Unit: KRW 100 million, %

Category	2015		2016		2017	
		(%)		(%)		(%)
Total Guarantee Supply	209,804	100.0	216,183	100.0	222,555	100.0
Tech Innovative SMEs	200,447	95.5	206,297	95.4	213,411	95.9
Venture Businesses	119,368	56.9	128,306	59.4	128,693	57.8
Inno-Biz	67,359	32.1	69,635	32.2	67,697	30.4
Startups	86,213	41.1	85,843	39.7	88,317	39.7
Tech Appraisal Guarantee	202,802	96.7	208,794	96.6	215,783	97.0
Knowledge & Culture Industry	34,190	16.3	36,304	16.8	37,192	16.7
Job-Creating SMEs	49,876	23.8	49,886	23.1	61,655	27.7
New Growth Engine	70,812	33.8	66,580	30.8	69,453	31.2
P-CBO Guarantee	1,169	0.6	2,562	1.2	2,609	1.2
Total Guarantee Balance	207,096	-	212,075	-	218,506	-

Guarantees for technology-innovative enterprises

In tandem with government policy of innovation-driven economic growth, guarantees for tech-innovative firms increased to KRW 21.3 trillion in 2017, up KRW 711.4 billion from 2016 (20.6 trillion). The financial resources of KOTEC was intensively committed to technology-innovative enterprises, with the amount of guarantees to them accounting for as high as 95.9% of total amount of credit guarantee provision.

Guarantees for tech startups

In order to invigorate national economy by creating jobs and promoting youth entrepreneurship, KOTEC expanded the scope of eligibility criteria to be classified into the startup from less than 5 years of operation to 7 years. KOTEC gradually expanded its guarantee provision to startups from KRW 8.6 trillion in 2015 and 8.6 in 2016 to 8.8 in 2017.

Reform of the New Growth Industry category and establishment of support system to create future growth engines

In order to preemptively address rapid industrial changes, in particular those vaguely termed as the 4th Industrial Revolution, KOTEC has proactively collaborated with the government to define a New Growth Industry category and implemented a corresponding support system thereof. In the resulting 'New Growth Industry Support System', the target groups were reclassified in accordance with the 'Shared Criteria for the New Growth Industry' consisting of 9 themes and 45 areas and support schemes were also restructured. The restructuring of the support system was conducted with the aim of helping SMEs increase their competitiveness while establishing stable growth amidst the ever-changing industrial structures.

Performance of Major Operations

Guarantee Support for the New Growth Industry

Unit: KRW trillion

Category	2015	2016	2017
Guarantee Provided for the New Growth Industry	7.1	7.4	9.0
Share out of the Total Guarantee Provided(%)	34.0	34.6	40.9

B. Creating Jobs and Encouraging Entrepreneurship via Technology Financing

Introduction of new job-creation support programs tailored to recruitment environments of firms

In its attempt to contribute to quantitative increases and qualitative improvements in the creation of new jobs, KOTEC expanded the target group of its job-creation support programs by loosening its criteria of selecting Job-creating Firms. In the meantime, KOTEC introduced the Good-Job Guarantee Program, a special guarantee program providing tailored supports for job-creating firms in accordance with their recruitment environments. Focusing on the goal of establishing “more jobs and better jobs”, the Good-Job Guarantee Program is composed of three sub-programs as follows: ‘Sharing Job’ for the firms that hire vulnerable groups in the job market (non-regular workers, career-stunted women, people with disabilities, etc.); ‘Jumping Job’ for the firms that increase job opportunities; and ‘Best Job’ for the firms that maintain 30 or more regular workers.

New Good-Job Guarantee Provided in 2017

Unit: No. of companies, KRW 100 million

Category	Sharing Job	Jumping Job	Best Job	Total
No. of Companies	352	182	82	616
Guarantee Amount	1,060	841	482	2,383

Restructuring of startup guarantee system and expansion of support

It has become increasingly important to identify and incubate tech startups in order to build a foundation for future growth and to tackle the issue of growth without employment. As such, KOTEC has increased guarantee support for tech startups. In particular, in order to help startups survive the so-called Death Valley (the 3rd to 7th years after launch) and secure financing, KOTEC expanded the scope of its guarantee eligibility from startups in their first 5 years since their foundation to those in their first 7 years. Startups are categorized by age so as to provide differentiated support, allowing for greater fee deduction and guarantee coverage for early-stage startups with typically have low credit scores.

Preferential Support for Startups by Stage

Category	Pre-startup	Early stage		Mid-stage	Late stage
Age	Before foundation	up to 1 year	up to 3 years	4-5 years	6-7 years
Guarantee Ratio	100%	100%	95%	95%	90%
Fee Deduction	△0.7%p		△0.4%p	△0.3%p	△0.3%p

In addition, the Customized Startup Growth Program was established to provide focused support for startups falling in one of four designated categories, including knowledge and culture startups, science and engineering startups, technology career-based core industry startups, and hi-tech & growth-associated startups. Under this program, a total of KRW 2.2143 trillion was provided to 8,839 startups. In order to expand its client base by extending more guarantees to startups and micro loans they borrow, KOTEC also provided various startup support programs for early-stage startups, younger generation startups, and startups with no sales records. Under these various programs, KRW 3.5046 trillion (66.3% of the total KRW 5.2859 trillion for new guarantees) was provided to 12,692 startups. KOTEC continuously scaled up its guarantee support to startups via its technology appraisal tool which focuses more on future growth potentials and it was able to contribute to boosting startup culture to a great extent.

Improving the Tech-Valley platform designed to support startups founded inside the universities and research institutions

KOTEC identified the need to provide systematic support for the entire commercialization process for excellent technologies developed by domestic universities. As such, KOTEC launched Tech Valley, an open innovative platform, and signed agreements with 5 top-tier universities, including Seoul National University, Yonsei University, Korea University, KAIST, and POSTECH. This initiative, the first of its kind among financial institutions in Korea, was eventually expanded in scope via the R-Tech Valley Implementation agreements signed with an additional 40 universities and 14 research institutions associated with the startup industry. These initiatives enable KOTEC to support outstanding talents from the 70 universities and research institutions in their efforts to found startups.

This program is designed to incubate excellent startups established by high-caliber individuals in universities with excellent research records. It provides comprehensive financial and non-financial supports for each growth stage as follows: for firms at the seed phase, a pre-approved guarantee limit of up to KRW 3 billion is granted and the requirement for third-party guarantee does not apply. Those firms at the scale-up phase are given preferred opportunities for guarantee-linked investments and various marketing/sales supports. Supports for IPO and technology transfer are extended to firms at the maturity phase.

Establishing a startup safety network to encourage business founding

To promote business startup and maintain economic resilience, the joint and several guarantee system was reformed. For sole proprietors, only the actual owner registered as co-owner on the certificate of business registration is jointly and severally liable for the payment of debt. For corporations, only formal actual owner (i.e. representative director or largest shareholder, etc.) is supposed to be held jointly and severally liable. With this new system in place, the average number of joint guarantors of new guarantees has continuously declined (by 0.05 for sole proprietors and by 0.69 for corporations in 2017). In addition, KOTEC expanded the special measure for exemption of duty to provide third-party guarantee to include non-startups with excellent technology (with a technology rating of AAA to A) to proactively address the adverse effects of the joint and several guarantee system.

Performance of Major Operations

In order to establish a stable financial environment capable of supporting innovation and market success while reducing risk of failure for startups, KOTEC introduced a new startup guarantee program that exempts joint guarantees. As part of this program, KOTEC signed agreements with 17 commercial banks to spread such exemptions throughout the financial sector. The institution also expanded eligibility from startups in their first 5 years of establishment to startups in their first 7 years. The total amount of new guarantees with exemptions of joint guarantee increased by KRW 151.5 billion to KRW 962.5 billion in 2017, a year-on-year increase of 18.7%. The number of beneficiary enterprises was 3,773 in 2017, up 1,017 (36.9%) from the year before.

In addition, KOTEC abolished discriminative components against former obligors whose legal liabilities were expired or completed. For those who completed their reimbursement obligations, the same criteria as with the normal SMEs were applied in screening guarantee applications from them in order to ease burdens arising from business failure and encourage commercialization of creative ideas.

No. of Average Joint Guarantors for New Guarantees

Unit: persons

Category	2013	2014	2015	2016	2017
Sole Proprietor	0.09	0.06	0.05	0.06	0.05
Corporation	1.07	1.03	1.02	0.76	0.69

C. Increasing Proactive Support for the High-tech Industry Which Will Lead 4th Industrial Revolution

Introduction of a specialized program in support of the 4th Industrial Revolution

The growth of existing industries has been suppressed by the slow national economic recovery, a low birth rate and an aging society. However, the 4th Industrial Revolution has arrived, and in support its growth, KOTEC has introduced specialized programs to provide proactive support for new growth areas. These programs include the Industry 4.0 FIRST (Fourth Industrial Revolution and Significant Transformation) Guarantee and the 4.0 Smart Factory Guarantee. Such support program are the first initiatives of their kind specially designed to increase support for the 4th Industrial Revolution in the Korean financial sector.

The new support programs are designed to identify cutting-edge technologies and enterprises that will lead the 4th Industrial Revolution and to promote construction of smart factories that would bring high added value in the manufacturing sector. The goal of the programs is to help SMEs secure a competitive edge in preparation for the 4th Industrial Revolution and help them grow into strong enterprises.

Performance of 4th Industrial Revolution Support Programs

Unit: No. of companies, KRW 100 million

Program	Purpose	New Guarantee Provided in 2017	
		No. of Companies	Amount (KRW 100 million)
Industry 4.0 FIRST Guarantee	Enhancing competitiveness of high-tech industries that will lead 4th Industrial Revolution	1,833	6,451
4.0 Smart Factor Guarantee	Enhancing competitiveness of the Korean manufacturing industry by promoting construction of smart factories	84	486

Building an internal & external network to support leaders of the 4th Industrial Revolution and strengthening support capabilities

In order to establish an internal and external network and implement a guarantee support system to identify and incubate leaders in the 4th Industrial Revolution, KOTEC in partnership with the Ministry of Trade, Industry and Energy, the National Information Society Agency (NIA) and TechnoPark, has identified 117 leading companies and provided them with a combined guarantee support of KRW 54.7 billion. As part of the Financial Support for 4th Industrial Revolution Leaders initiative, KOTEC also signed agreements with commercial banks, which enabled it to provide financing in a timely manner and help tech SMEs save borrowing costs via guarantee fee reduction.

Furthermore, KOTEC signed an MOU with KOTRA for a joint cooperation in helping tech-SMEs enter international markets. Through the cooperation with KOTRA, KOTEC strengthened its capacity to help SMEs find opportunities to transfer technologies overseas and market their products and services.



Performance of Major Operations

Technology Appraisal

A. Technology Appraisal Overview

Concept

Technology appraisal refers to an in-depth assessment of the technological competence, marketability and commercial viability of intangible technologies or related projects, with more of the focus on their potential values. The evaluation results are then expressed in monetary value, ratings, points, and opinions.

Scope of Technology Appraisal

Technological Value	Marketability	Business Feasibility
<ul style="list-style-type: none"> • Technology overview • Domestic and overseas technology trends • R&D environment • Level of technology, etc. 	<ul style="list-style-type: none"> • Market size and characteristics • Industry status • Market demand outlook 	<ul style="list-style-type: none"> • Sales outlook • Price and quality competitiveness • Business viability etc.

Types of technology appraisal

Technology appraisals are categorized into technology valuation, technology project viability assessment, and comprehensive technology assessment, in accordance with the purpose and usage of each appraisal case.

Types of Technology Appraisal

Category	Definition
Technology Valuation	Appraises the value of the technology currently being manifested or to be manifested in the future, and expresses the results of the appraisal in a monetary value
Technology Project Viability Assessment	Assesses technological competence and commercial viability of a certain technology project and expresses its result in a rating in case where a firm is set to launch a project to commercialize a specific technology or idea, or to expand its investment into an ongoing technology project
Comprehensive Technology Appraisal	Comprehensively appraises all technologies the enterprise has in connection with the nature of the enterprise, such as the management environment and business prospects

B. Operation of the Technology Appraisal Business

Progress

Since it founded its first Technology Appraisal Center and launched its technology appraisal service in Korea in March 1997, KOTEC has been serving as the leading technology appraisal institution, setting major milestones in the technology appraisal market including the launch of technology appraisal-based guarantee system, development of the new technology appraisal systems (KTRS), being accredited as the institution to issue certificates of Venture and Inno-Biz, and being designated as one of the Technology Credit Bureaus.



MOU Signing Ceremony, Kotec, EIB and UNIDO



Online KIBO Patent Appraisal System



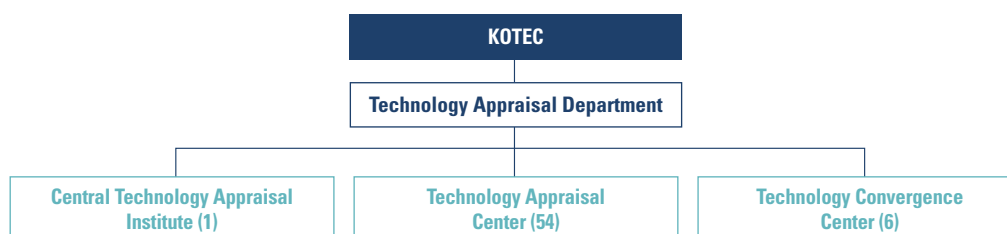
Website for the test of "Technology Credit Appraiser" certification

- Mar. 1997** Opened technology appraisal center
- May. 1997** Designated as an agency for the appraisal of the technological competence and business feasibility of patented technology (Invention Promotion Act)
- Oct. 1997** Designated as an appraisal agency for evaluating the value of investment made in-kind through transfer of IPs by Venture Businesses (Act on the Special Measures for the Promotion of Venture Businesses)
- Aug. 1998** Designated as an appraisal agency for identifying Venture Businesses (Act on the Special Measures for the Promotion of Venture Businesses)
- Nov. 1998** Designated as a technology appraisal agency for the valuation of the intellectual properties invested in-kind by foreigners (Foreign Investment Promotion Act)
- Feb. 1999** Implementation of technology appraisal guarantee system
- Apr. 2001** Designated as a professional agency specializing in technology appraisal, transfer of technologies and commercialization (Technology Transfer Promotion Act)
- Jul. 2001** Designated as a technology appraisal agency for the evaluation of Venture Businesses seeking to be listed on the KOSDAQ (Korea Securities and Dealers Association)
- Aug. 2001** Designated as a technology appraisal agency for the selection of INNO-BIZ enterprises (technology-innovative SME) (Small and Medium Business Association)
- Sep. 2004** Launched a technology appraisal certification system (for internal use)
- Jul. 2005** Implemented the new KIBO (KOTEC) Technology Rating System (KTRS)
- Apr. 2007** KTRS acquired domestic BM patent
- Apr. 2008** Applied a patent registration for the international patent (PCT) for the technology appraisal system (KTRS) in other countries (Japan, China, and Singapore)
- Oct. 2009** Acquired a Korean patent for a technology appraisal model (KTRS-Startup) which is used for assessment of startups
- Apr. 2010** Designated as the appraisal agency for green certification by the government
- Oct. 2010** KTRS Feedback System acquired domestic patent (two cases)
- Jan. 2011** Applied and implemented the research results for the advancement of KTRS (KTRS-V2.0)
- Nov. 2012** Developed a Green Technology Rating Model (GTRS) for improved assessment of Green Technology and related industries
- Dec. 2013** Improved the KTRS models and redefined system processes (by applying the results of commissioned research)
- Jun. 2014** Designated as one of the Tech Credit Bureaus (TCB)
- Jul. 2014** Developed the Pre-Startup Appraisal Model
- Jul. 2015** Applied for BM patents (2 cases) on technology appraisal methods and know-how
- Dec. 2015** Developed the Technology Appraisal Model used for ensuring informed decision makings in equity investment
- Jan. 2016** Implemented "Technology Credit Appraiser" certificate system for the public
- Aug. 2016** Joined the Climate Technology Center and Network (CTCN)
- Oct. 2016** Received the "Presidential Award" for Financial Reform
- Dec. 2016** Awarded the "IP Commissioner (Prime Minister) Award" for its IP promotion activities
- Sep. 2017** Launched the Online KIBO Patent Appraisal System (KPAS)
- Nov. 2017** Hosted an International Symposium on the 20th Anniversary of its technology appraisal business

Performance of Major Operations

Technology appraisal organization and manpower

To meet the growing demands for technology appraisal and to enhance work efficiency, KOTEC has constructed a specialized technology financing business network across the nation comprising of 1 central technology appraisal institute, with 6 technology convergence centers and 54 technology appraisal centers as of the end of 2017.



Organization	Roles	Key Responsibilities
Central Technology Appraisal Institute	Key appraisal institution to perform highly sophisticated appraisals	<ul style="list-style-type: none"> Highly sophisticated technology appraisal (technology appraisal for investment in-kind, etc.) Technology appraisal marketing in the government and relevant institutions Verification of technology appraisal reports and support for technology appraisal, etc.
Technology Convergence Center	Specialized organization to support technology transfer and commercialization	<ul style="list-style-type: none"> Specialized technology appraisal regarding technology transfer and M&A (including accompanied guarantees) Identification of technology transfer demands, technology transfer mediation, and marketing functions Technology information collection and processing, networking with relevant institutions
Technology Appraisal Center	Conduct standardized technology appraisal work	<ul style="list-style-type: none"> Technology appraisal guarantee (including IP guarantee, R&D guarantee, etc.) Technology project viability assessment (e.g., feasibility test on government R&D projects) Tech-credit appraisal, Venture/Inno-Biz certification, etc.

KOTEC continues to nurture highly-competent and dedicated technology appraisal experts*, providing opportunities to earn new theories and knowledge on technology appraisals in general, and to gain actual field experiences in technology appraisals.

Headcount	2012	2013	2014	2015	2016	2017
Total Employees	1,066	1,085	1,102	1,126	1,156	1,211
Dedicated Technology appraisal experts	532	578	552	592	581	605
Ph.D Degree holders (or equivalent)	134	147	154	168	190	215

* Dedicated technology appraisal experts: Ph.D Degree holders (or equivalent), those designated as professionals, members of the Technology Appraisal Department/Central Technology Appraisal Institute/Technology Appraisal Team, or those certified for Technology Appraisal Level 3 or above

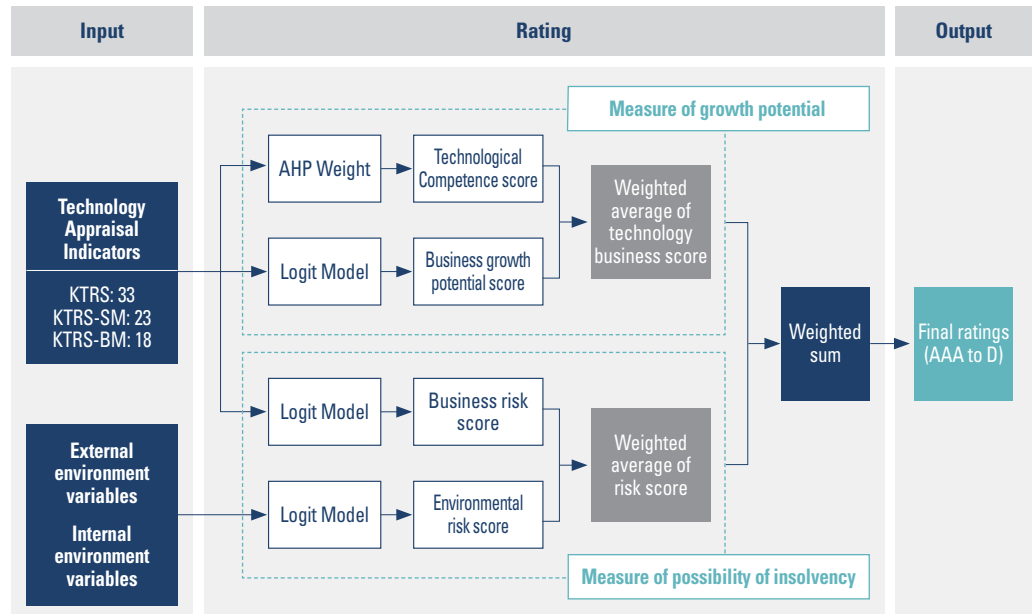
To overcome the limitations of in-house human resources and to enhance appraisal expertise, KOTEC established a pool of external advisors from the industry, academia, and research fields to perform swift and reliable technology appraisals.

Machinery	Telecom	Electronics & Electricity	Materials & Metals	Chemical	Textile	Biology	Environment	Financial Accounting	Patent Law	Culture & Contents	Others	Total
172	128	133	88	82	13	97	36	155	51	52	67	1,074

Technology appraisal system

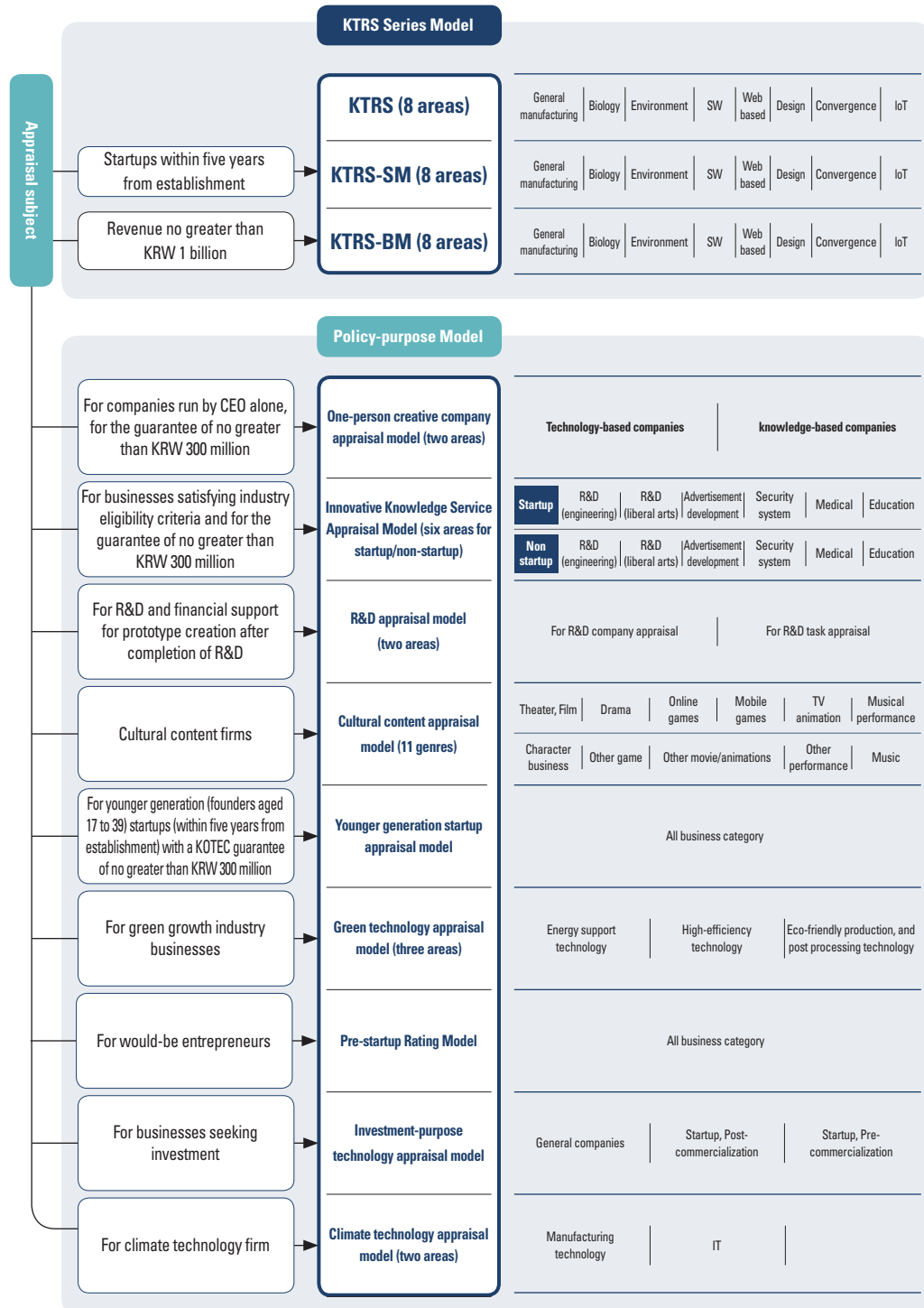
KOTEC has developed and has been operating its proprietary technology appraisal system, the KIBO Technology Rating System (KTRS), to assess and rate technological competence, commercial viability, and marketability of intangible technologies or related projects, which are difficult to evaluate with conventional credit rating systems whose focus is more on the financial status of firms.

Optimized for technology financing, KTRS takes into account the future potential for success and risks of a technology-based project at the same time. Since its introduction in July 2005, it has been showing a stable and reliable performance in terms of managing default rates and risks owing to continuous system verification and refinements.



KOTEC has also developed a variety of technology appraisal models to meet different appraisal purposes and diverse consumer demands.

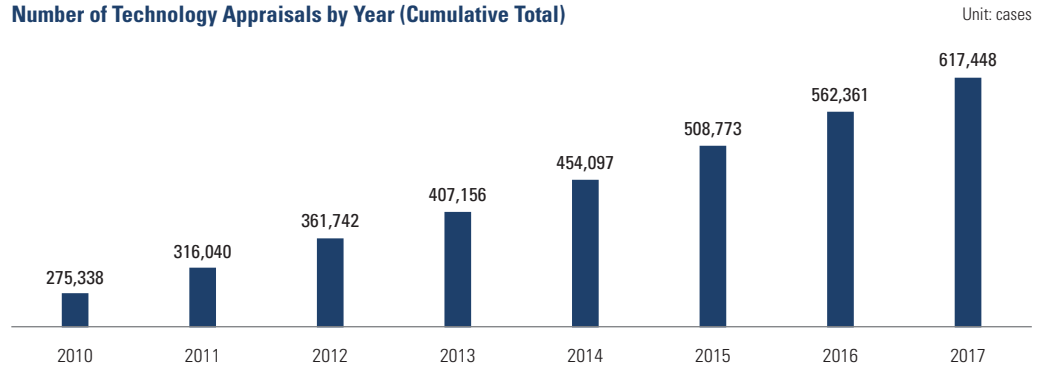
Performance of Major Operations



Technology appraisal performance

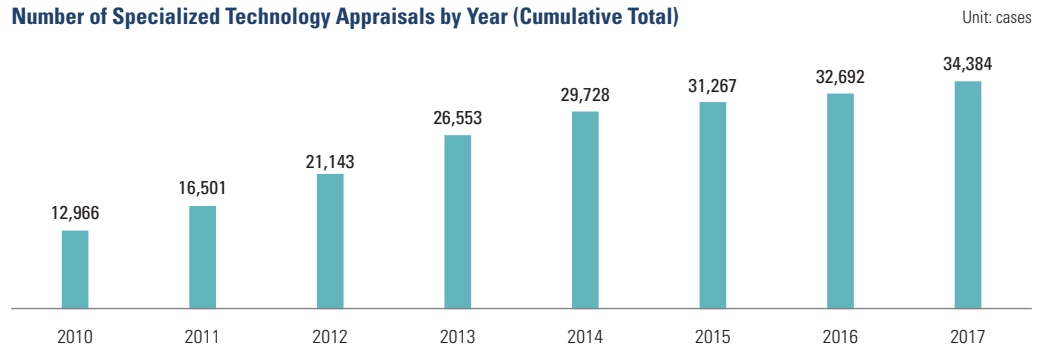
Since the launch of its technology appraisal business in March 1997, KOTEC has completed a total of 610,000 technology appraisal cases as of the end of 2017, securing its status as the leading technology appraisal institution in Korea.

Number of Technology Appraisals by Year (Cumulative Total)



Among other technology appraisals cases, those conducted for the government or the public sector and those for the private sector with appraisal fees of higher than KRW 2 million are more challenging. They are classified into the specialized technology appraisal type that requires more sophisticated expertise and objectiveness, and they contribute a lot to the expansion of the domestic technology appraisal market and to the promotion of technology financing.

Number of Specialized Technology Appraisals by Year (Cumulative Total)



KOTEC is the one and only public financial institution which was designated as TCB (Technology Credit Bureau) in July 2014 by the government. It has been participating in the task of constructing technology credit evaluation system in cooperation with commercial banks and private sector TCBs, contributing to the activation of technology financing in the nation.

TCB-linked Work Performance

Cases of TCB-linked Technology Appraisal			
2014 (from July)	2015	2016	2017
4,360	9,639	13,062	11,509

Performance of Major Operations

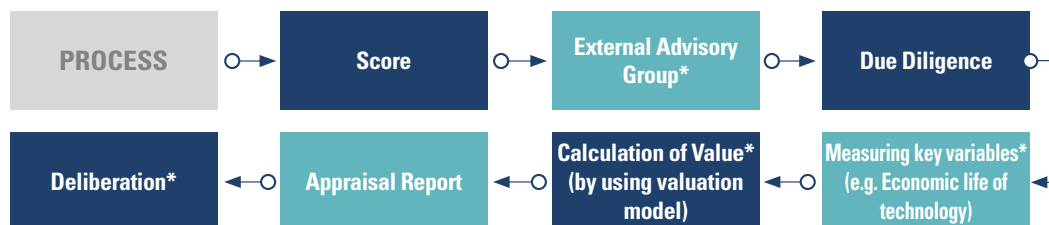
C. Major Progress and Achievements of Technology Appraisal in 2017

Serving as a frontier for the intellectual property (IP) financing in Korea

Equipped with the best technology appraisal infrastructure in the country, KOTEC stands at the heart of driving IP finance. KOTEC introduced advanced financing programs, such as IP Technology Value Appraisal Guarantees and Technology Value-linked Guarantees, in 2006 for the first time in Korea. It restructured these programs into the IP-based Guarantee System in August 2013 so as to provide differentiated guarantee services for technology SMEs based on their IP value.

As the IP-based Guarantee System involves technology valuation process on top of the general technology appraisal procedure, it requires much more sophisticated expertise as well as higher costs for conducting evaluation. As such, it has not been used extensively. However, KOTEC has signed MOUs with relevant institutions, including Korea Intellectual Property Office (KIPO), several commercial banks and the Foundation for Cooperation between Large Corporation and SMEs, to reduce financing costs for technology SMEs and to proactively drive the IP guarantee services.

Technology Valuation Process



* Differentiated features found only in the Technology Valuation process

In 2016, KOTEC introduced the Cowork-Kibo system in which internal and external experts can cooperate on technology appraisals in a shared cyber space. KOTEC also divided the technology valuation reports into four types to provide more options for users. The company's market-oriented approach to IP evaluation has further contributed to advances in IP financing in Korea.

IP Guarantee Support Provided

Unit: cases, KRW million

Category	2014		2015		2016		2017	
	Cases	Amount	Cases	Amount	Cases	Amount	Cases	Amount
Total IP Guarantee Provided	1,579	2,952	2,250	4,349	3,037	6,141	3,874	7,992
IP Valuation Guarantee	1,313	2,602	1,794	3,811	2,323	5,278	2,884	6,681
IP Acquisition Guarantee	266	350	455	535	714	863	990	1,311

Enhancing comprehensive R&D support for SME technology innovation

KOTEC introduced its R&D Guarantee Support program in 2008 to identify high-potential R&D projects and provide support for the entire life cycle of the projects in order to facilitate technology development and commercialization.

Entire R&D Life cycle Guarantee System

Stage	Planning or Development	Prototype	Commercialization or Mass Production
Development			
Pre-commercialization			
Commercialization			
Eligible Fund	Fund for R&D costs	Fund for making prototype after R&D completion	Fund for fixed asset investment or working capital needed for commercialization or mass production of R&D results
Appraisal Method	Analysis on commercial viability and profitability		Analysis on commercial viability
Appraisal Model	R&D Appraisal Model		KTRS / KTRS—SM

In 2017, KOTEC provided a record high of KRW 4.8 trillion under the Comprehensive R&D Support System, greatly contributing to the advancement in the technological competitiveness of SMEs.

R&D Guarantee Support Offered

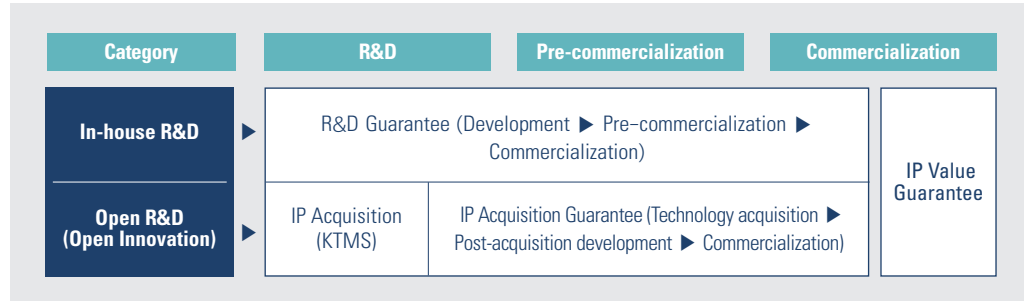
Unit: cases, KRW 100 million

	2014		2015		2016		2017	
	Cases	Amount	Cases	Amount	Cases	Amount	Cases	Amount
Total R&D Guarantee	8,543	29,515	10,853	34,257	13,860	41,937	17,493	48,348
Development	3,601	5,987	5,023	8,103	6,835	10,651	9,171	13,794
Pre-commercialization	687	1,139	731	1,210	749	1,180	820	1,214
Commercialization	4,255	22,389	5,099	24,944	6,276	30,106	7,502	33,341

The scope of KOTEC's R&D finance support, whose eligibility had been limited to the internally-developed technologies, was expanded to cover the acquisition of externally-developed technologies (open R&D) in 2016. This measure helped KOTEC contribute to facilitating the commercialization of R&D results (e.g. Intellectual Properties) and earned KOTEC the "Intellectual Property Commissioner (Prime Minister) Award."

Performance of Major Operations

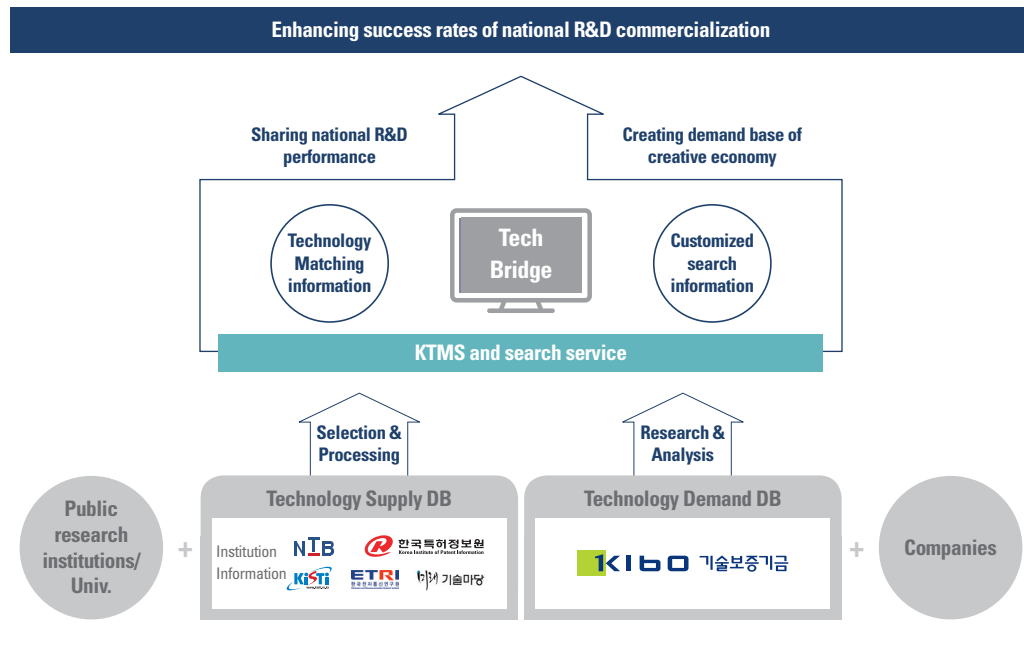
Open R&D Support System



Establishing a demand-oriented technology transaction platform in Korea

KOTEC launched its technology transfer platform in January 2014 to fully tap into the R&D results in the nation. The dedicated online platform, Tech-Bridge, was launched in September 2014 to support open innovation and job creation for tech-SMEs. (As of the end of December 2017, its database has accumulated 323,741 cases of technology supply information and 5,189 cases of technology demand information.)

Technology Transaction Platform: Tech-Bridge

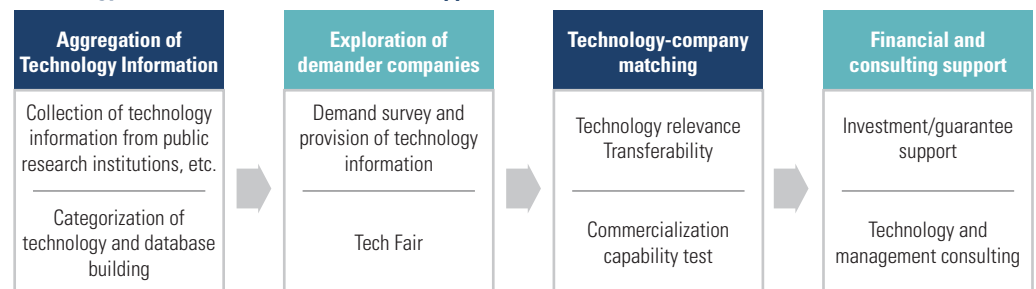


KIBO Technology Matching Service (KTMS): Patented in October 2015

In order to encourage voluntary participation of market players and to enhance usability of the platform, KOTEC remodelled Tech-Bridge into a shared platform by adding features, such as search by institution, advanced search mechanisms, and information on technology supply (or demand) of each institution etc in 2016.

KOTEC signed technology demand discovery agreements with financial institutions (7 banks as of the end of December 2017), strengthened networks with public research institutions and technology information centers (MOUs signed with 187 institutions as of the end of December 2017), and systematically improved its technology and commercialization support process. As a result, KOTEC was able to identify 1,490 cases of technology transfer demand, sign 528 technology transfer contracts and provide KRW 60.8 billion for technology transfer guarantees in 2017.

Technology Transfer and Commercialization Support Process



Implementing on-offline integrated support system for technology transfer and commercialization

Leading efforts to expand the technology appraisal market

KOTEC leads various initiatives as the leader in the technology appraisal market in order to expand the scope of technology appraisal and to consistently create demand thereof. KOTEC implemented the Preferential IPO Program for Tech SMEs based on the MOU with Korea Exchange in order to facilitate a technology-oriented venture capital market. The program enables tech SMEs to go public on KOSDAQ or KONEX based on their technology appraisal results even if they were not able to meet financial requirements.

Preferential IPO for Tech SMEs

	Details					
Requirements	Companies that receive technology appraisal ratings of BBB or higher from 2 of specialized appraisal institutions and at least one rating should be A or higher					
Performance		2013	2014	2015	2016	2017
	Appraised SMEs	4	5	12	12	8
	Listed SMEs	1	2	3	1	2

Performance of Major Operations

KOTEC also developed and distributed the Technology Appraisal Model for Investment Decision Making which demonstrates appraisal indicators suitable for selecting investment targets in terms of growth potential and investment returns. This will encourage private-sector TCBs and VCs to expand investment in excellent technology firms. In April 2016, KOTEC launched the Technology Appraisal Certification program based on this model, and in 2017, it provided 15 detailed evaluation models for the service and cultural contents industries to further expand the private technology appraisal market. Capitalizing on its technology appraisal expertise, KOTEC has participated in public technology appraisal projects for IP and R&D commercialization, including the R&D Planning Support Project (Ministry of SMEs & Startups, MSS), R&D Commercialization Support Project (the Ministry of Science, ICT and Future Planning, MSIP), Patent Technology Valuation Support Project (Korean Intellectual Property Office, KIPO), and SW Technology Valuation Project (MSIP).

Furthermore, KOTEC operated online and offline education programs to cultivate technology finance specialists in an effort to support the government initiative, “TCB Loan Development Road map”. The education programs focused on practical knowledge and training, particularly on the technology trends and market details of each industry, to improve the expertise of the technology financing staff of commercial banks and venture capitals, and to provided them with networking opportunities to exchange relevant information.

In 2016, KOTEC launched the “Technology Credit Appraiser” certification test to cultivate technology finance specialists. Through this program, 1,801 private appraisers (Level 1: 26, Level 2: 259 and Level 3: 1,516) were certified by the end of 2017. This effort was praised by the government, and KOTEC was awarded with the Presidential Prize on the commemoration of Finance Day of 2016.

Globalization of KTRS to advance KOTEC’s international standing and support of SMEs global market penetration

KOTEC has been actively transferring its technology rating system (KTRS) to foreign countries, earning worldwide recognition on its proprietary technology appraisal model. It has also been receiving various invitations for cooperation from developed countries. For example, KOTEC gave a keynote speech on KTRS at the General Assembly of the Singapore Business Federation (SBF) in 2016. In 2017, the Company completed developing KTRS for Europe deployment, and signed an MOU with European Investment Bank (EIB) to confirm the business roadmap.

KTRS Deployment Road map in Europe



* Introduced as a Good Practice case by EU Innovation Partnering Forum(IPF) (Nov. 2012)

KOTEC has already built up a solid foundation for global demand for KTRS in emerging economies by introducing its advanced technology financing and appraisal systems to them. Thailand and Vietnam, for example, have established dedicated organizations to adopt and operate their own technology rating systems as recommended by KOTEC.

Construction of Global Demand Base for KTRS

	Partner	Details
Capacity Building	State Agency for Technology Innovation (SATI) of Vietnam	User training for Establishment of Vietnam Technology Rating System (VTRS) (Nov. 2016)
Localization Support	Thai Credit Guarantee Corporation (TCG)	Completion of Thai Technology Rating System (TTRS) (May. 2017)
Financial System Export	Fondo de Garantia para Prestamos a la Pequena Industria (Fogapi) of Peru	Technology rating and guarantee system export to FOGAPI (Jul. 2017)

KOTEC also established a global expansion support network for SMEs in order to help them combat chronic low growth.

As SMEs do not usually have sufficient information on overseas markets and lack financing for global expansion, KOTEC has prepared a bridge for them, capitalizing on the company's core strengths of information (including a database of 70,000 plus companies), financial support and extensive partner networking.

By utilizing its perennial cooperation network to share organizational knowledge and human resources between domestic bases (the National IT Industry Promotion Agency (NIPA), and the Foundation of Agri-Tech Commercialization and Transfer (FACT)) and overseas bases (US, China, Europe etc.), KOTEC identifies SMEs seeking global expansion and provides them with customized services, including localization, sale channels and/or global technology transfers.

Leading climate technology financing

Regulations set by the new UN climate change regime demand that all member countries reduce greenhouse gas (GHG) emissions. To preemptively cope with these changes, KOTEC came up with a plan to enhance global cooperation with regard to climate technology. In 2016 KOTEC joined the Climate Technology Center Network (CTCN) of the UN as the first member from the Korean financial sector. It further implemented a support system for climate technology businesses, including climate technology finance in 2017.

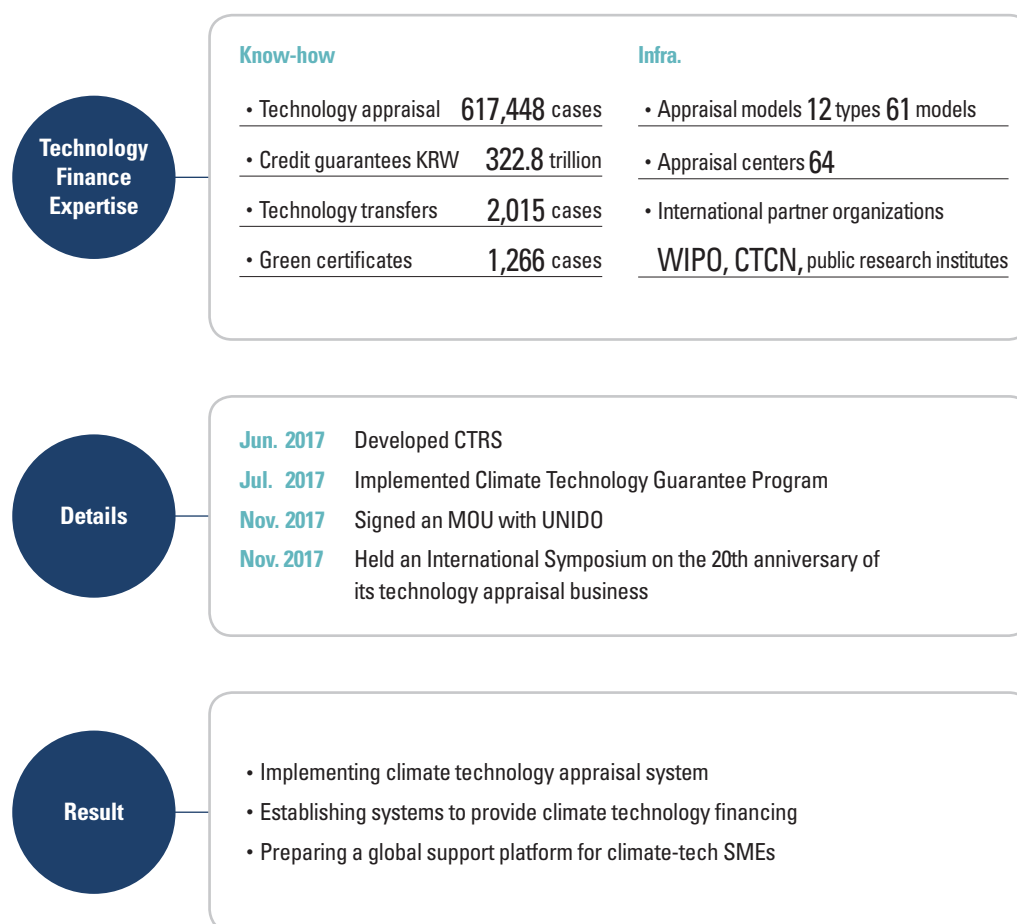
First of all, KOTEC developed the Climate Technology Rating System (CTRS) in June 2017, and established and implemented the Climate Technology Guarantee Program in July 2017 to systematically support climate technology companies in their R&D and commercialization efforts. That same year, KOTEC provided 347 climate technology enterprises with a total of KRW 129.3 billion in guarantees. KOTEC has set forth a long-term plan to increase this guarantee provision to KRW 300 billion in 2018 and 1 trillion in 2022.

Performance of Major Operations

KOTEC also signed an MOU with United Nations Industrial Development Organization (UNIDO) in November 2017 to facilitate business partnerships between Korean climate-tech SMEs and SMEs in emerging economies. This platform will help Korean climate-tech SMEs deliver practical commercialization results in emerging markets.

In addition, KOTEC held an International Symposium in commemoration of the 20th anniversary of its technology appraisal business in November 2017. Under the theme of “Climate Technology Appraisal and the Role of Technology Finance”, experts from home and abroad* gave keynote speeches and discussed the direction of the institutional system to assist in the global penetration of climate technology SMEs.

Climate Technology Finance Performance



Guarantee-linked Investment

A. Overview

KOTEC has operated its guarantee-linked investment program since January 2005 in order to help startups and tech SMEs get better access to direct financing and improve financial structure. The program, through which KOTEC makes direct investment in connection with preceding guarantee provisions, was stipulated as a formal service of KOTEC in March 2012 (effective from June 2012) by the amendments made to the Korea Technology Finance Corporation Act. KOTEC in particular focuses on investing preemptively in startups and innovative tech SMEs that have not previously received institutional investments. Investments from KOTEC play the role of priming water in encouraging further follow-up investments from the private sector, as they can alleviate the problem of information asymmetry investors face when investing in SMEs and provide them with a sort of assurance. KOTEC is gradually increasing its guarantee-linked investment business in order to revitalize the investment-focused startup ecosystem, lowering its excessive dependence on indirect financing instruments including credit guarantee.

B. Investment Types

Investments are made through the acquisition of stocks, convertible bonds (CB), and bonds with warranties (BW).

C. Investee Companies

SMEs meeting all the following requirements are eligible for this investment.

① Startups with less than five years of operation

* Companies in new growth industries and/or dedicated to R&D projects may be exempt from this requirement if support is deemed necessary in terms of policy directive.

② Firms that have received guarantee provisions from KOTEC (or approval for provision of a guarantee).

③ Excellent technology firms with an investment technology appraisal rating of TI 5 or higher.

* In the case that the investment amount exceeds KRW 1 billion or the total amount of investments and guarantees exceeds KRW 5 billion, the TI rating must be 4 or higher.

④ Venture Businesses or Inno-Biz certified in compliance with provision of related laws.

D. Investment Ceiling on Individual Enterprises

An investment in an individual firm shall be capped at KRW 3 billion, and the ceiling on gross amount of guarantee and investment at KRW 10 billion, provided that the investment amount shall not exceed twice the guarantee amount.

Category	TI 5 or higher	TI 4 or higher
Investment Ceiling on Individual Company	KRW 1 billion	KRW 3 billion
Ceiling on gross amount of guarantee an investment on Individual Company	KRW 5 billion	KRW 10 billion

* Investment Ceiling: amount of KOTEC's investment only

* Ceiling on gross amount: total amount of all guarantees and investments provided by KOTEC, KODIT, and KOREG

Performance of Major Operations

E. Investment Process

Capitalizing on its well-established technology appraisal expertise, KOTEC conducts a comprehensive investment valuation, taking into account technology competence, marketability, business feasibility, creditworthiness, and ROI.



F. Operating Performance

Since its first investments in 2005 to the end of 2017, KOTEC has invested a total of KRW 255.6 billion to 226 companies. Of these companies, 22 had their IPO on KOSDAQ and have posted an accumulated ROI of 8.0%. The following table details the operating performance by year.

Annual Investment Amount and ROI

Unit: No. of companies, KRW 100 million

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
No. of companies	2	10	7	8	9	8	4	2	30	35	35	36	40	226
Investment amount	5.0	85.0	81.5	90.0	90.1	95.0	55.1	35.0	431.8	366.7	405.8	384.6	430.3	2,555.9
Profit / Loss	-	-	29.0	2.1	19.8	5.2	21.4	41.1	22.8	△17.8	22.3	9.8	47.9	203.6

Enterprise Support

A. Venture Startups Class

For entrepreneurs preparing to launch a tech startup, KOTEC offers specialized, intensive education courses that encourage entrepreneurship and promote success, ultimately contributing to the growth of the national economy.

2017 Venture Startup Class Graduates

Unit: Persons

Round	1st Round	2nd Round	Total
No. of Graduates	83	60	143

B. Youth & Technology Startup Class (Formerly known as the Business Startup Class for CEOs of Sprout Enterprises)

For would-be startup founders aged 19 to 39 and startups in operation for less than three years, KOTEC provides free classes about business models, entrepreneurship and KOTEC's support programs. These classes are designed to create a startup ecosystem where youth's creative inventions and ideas can be brought into successful commercialization. By providing various types of learning venues required for early-stage startups and by enabling sharing of best practices, KOTEC has helped these businesses successfully take root at an early stage, explore new business areas, and form partnerships and human networks through exchanges with other sprout enterprises.

2017 Youth & Technology Startup Class Graduates

Unit: Persons

Round	1st	2nd	3rd	4th	5th	6th	Total
No. of Graduates	51	34	27	54	43	22	231

C. Specialized Class for CEOs of High-Growth Enterprises

This program is offered free of charge for the CEOs of KOTEC client companies in their third to fifth years of business experience, displaying excellent technology and growth potential. Implemented in 2014, the free, three-day program aims to improve CEO capabilities to promote growth in their business.

No. of Graduates from the Class for CEOs of High-Growth Enterprises in 2017

Unit: persons

Round	1st (2017)
No. of Graduates	238

Performance of Major Operations

D. Kibo Venture CAMP

Launching Kibo Venture CAMP*

Kibo Venture CAMP is an accelerating program designed to nurture promising early-stage business ventures based on KOTEC's technology appraisal infrastructure. The program seeks to help those promising startups grow into Korean-style hidden champions and create quality jobs.

*CAMP stands for Competitiveness Accelerating Management Program and is designed to improve the competitiveness of new venture startups.

The 1st Kibo Venture CAMP

In the second half of 2017, KOTEC announced the launch of the 1st Kibo Venture CAMP. 30 companies were selected from the 239 applicants after a round of document evaluations (1st screening) and a round of presentation evaluations (2nd screening).

Recruitment and Selection

Recruiting Ad	Applicants	1st Screening	Final Selection
August 17 to September 8, 2017	239 companies	60 companies (via document evaluation)	30 companies (via presentation evaluation)

KOTEC sought to create a collaborative and innovative ecosystem in cooperation with private institutions, including private accelerators, crowd funding brokers and financial institutions, in order to provide both financial and non-financial support for the selected participants.

Synergy in Cooperation with the Private Sector

Private Partner	Key Support Details
Private Accelerators	Provided advanced accelerating skills, such as incubation, mentoring, business skill development, market segmentation strategies, etc.
Crowd funding Brokers	Crowd funding brokerage for participants
Woori Bank	Arranged a loan product exclusively for Kibo Venture CAMP participants, and provided guarantee fee supports, etc.

CAMP Results and Future Plans

Kibo Venture CAMP is KOTEC's first specialized consulting-linked guarantee and investment support system designed to identify promising startups and incubate them through long-term focused support, a departure from traditional practices based on due diligence. KOTEC will further provide opportunities for these partners to secure investments, such as Demo Days to invite private investors (such as angel investors, private VCs, etc.) and Networking Days to connect participant companies and investors.

E. Business Support System by Growth Stage

01

Pre-Startup Stage

Support Program	Description
Conditional Guarantee for Pre-startups	Set a support limit (amount) for pre-startups and provide the support immediately after starting a business
Special Guarantee for Youth Startups	Support startups within the first five years of their foundation, and established and run by young owners (aged 17-39)
Customized Program for Startup Growth	Support qualifying* startups in the first five years of their foundation * Qualifications: one-person creative firm, green business, knowledge and culture business, high-tech core industry, startups by science and engineer majors, or startups founded by those in their 40s and 50s
Special Guarantee for Patent Startups	Support startups within the first five years of their foundation and commercializing IPs (including patents)
R&D Guarantee	Provide systematic R&D finance for the entire R&D cycle (development, pre-commercialization, and commercialization)
Youth & Technology Startup Class	Provide education and training for would-be startup founders aged 19 to 39 and startups in operation for less than 3 years to introduce business models and KOTEC's programs and to inspire entrepreneurship
Venture Startup Class	Provide practical training on business founding (e.g., financing strategies, HR, law, and IP management) for pre-startups

02

Growth Stage

Support Program	Description
Guarantee for High Value-added Service Projects	Provide guarantees for the entire project cycle in connection with such service contracts as IT solution development, SI service outsourcing, and cultural content creation
Special Guarantee for Fostering Prospective Star Ventures	Develop excellent ventures entering growth stage into major pillars of the Korean economy
Guarantee for Technology & Industry Convergence	Provide guarantees for firms working on or utilizing technology & industry convergence
IP Finance Support	Provide funding support for the future value of IP and acquisition of IP
Support for Job-creating Firms	Provide preferential guarantees for firms with large job creation potential and funding for recruiting new employees
Cultural Industry Completion Guarantee	Support firms creating cultural content (movie, game, cartoon, animation, digital content, music, and broadcasting)
Guarantee-linked Investment	Invest in connection with preceding guarantees to improve SMEs' financial structure and in increase direct financing for SMEs
Venture & INNO-BIZ Certification	Assess tech SMEs and accredit qualifying SMEs as Venture Business or Inno-Biz enterprise
Technology Valuation (Technology Transfer/Transaction)	Determine the value of a technology in connection with technology transfer or transaction
Technology Appraisal Certification (Reference for Investments/ Loans)	Provide financial institutions with technology appraisal certificate which contains technological ratings or evaluation opinions, so that they can refer to them in relation to investment and loan financing
Specialized Class for Growth Enterprises	Operate specialized training program (including management strategy simulation) for CEOs of growing enterprises (with high growth potential and excellent technology, three to five years)

Performance of Major Operations

Maturation Stage

03

Support Program	Description
Guarantee based on INNO-BIZ Financial Support	Provide preferential support for Inno-Biz firms through financial support agreements with banks *15 banks: KDB, IBK, Woori, Hana, KB, etc.
Guarantee Based on Special Contributions by Financial Institutions	Financial institutions raise funding resources through special contributions and KOTEC provides partial guarantees and fee support
Share-growth Guarantee	Provide guarantees to SMEs recommended by large corporations so that large corporations will pay matching contributions or special contributions
Preferential Guarantee for Equipment Loan	Provide CAPEX financing after preferential guarantee evaluation to encourage capital investment
Preferential Guarantee for Export SMEs	Provide export financing to SMEs for channel diversification, etc.
P-CBO	Acquire SME-issued corporate bonds to provide them with direct financing opportunities and improve their financial conditions
Technology Transfer and M&A Intermediary	Provide intermediary services to promote technology adoption for competitiveness and to restructure businesses for stable operation
Green Certification Appraisal	Verify and certify green technologies and businesses to support the green industry
R&D Project Feasibility Test	Test the technological and economic feasibilities of R&D or tech projects

Crisis/Rehabilitation Stage

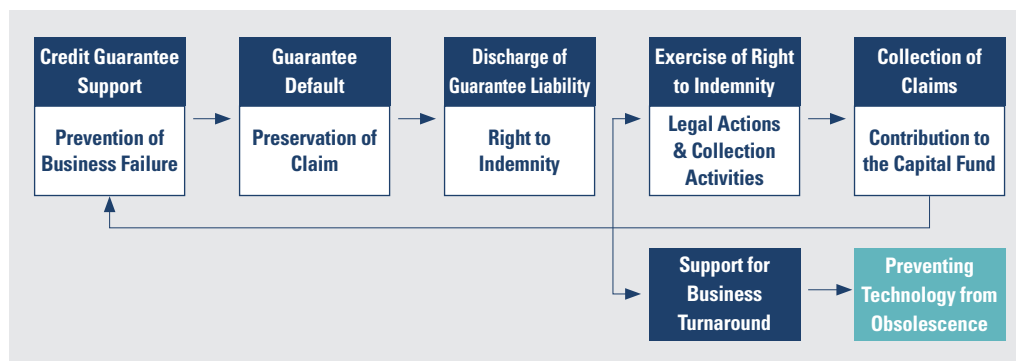
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Support Program	Description
Urgent Management Stabilization Guarantee	Provide prompt and adequate guarantees for firms in urgent need of funding
Management Improvement Support Guarantee	Help the normalization of guaranteed firms that have technology and potential but are experiencing difficulties
Fast-Track Liquidity Guarantee	Provide liquidity in a timely manner for SMEs facing temporary liquidity stress
Guarantee for Co-workout firms	Provide guarantees for firms for which creditor banks have already established a normalization plan as per the Corporate Restructuring Promotion Act and bank agreement
Re-start Business Revival Support Guarantee	Provide support for credit rehabilitation and the restart of failed SMEs to prevent the loss of technology and experience, and help with their rehabilitation
Rehabilitation Guarantee for Re-starting Business Owners	Provide both rehabilitation support guarantees and new guarantees for SME owners with promising restart potential
Preemptive Financial Health Program for SMEs	Prevent management crises that can occur in the course of business growth, and help SMEs solve problems and pursue greater growth and development

Default Prevention, Rehabilitation Support and Bad Debt Collection

KOTEC has made enterprise-wide efforts to ensure efficient default prevention and bad debt collection. These steps will help secure guarantee resources and enhance guarantee asset soundness as well as promote rehabilitation support for earnest-failure businesses.

Bad Debt Management Process



(A) Default Prevention

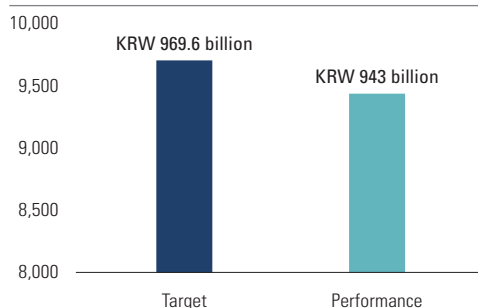
Enterprise Risk Management

In its attempt to minimize default cases, KOTEC has built a systematic ex-ante default management system where the performance of each branch is evaluated by the target default rate. Each year, the risk rates of each branch are calculated based on its guarantee portfolio and an estimated annual risk amount is allocated to each branch. KOTEC also conducts regular ex-post monitoring on high-risk companies in a bid to prevent business failures.

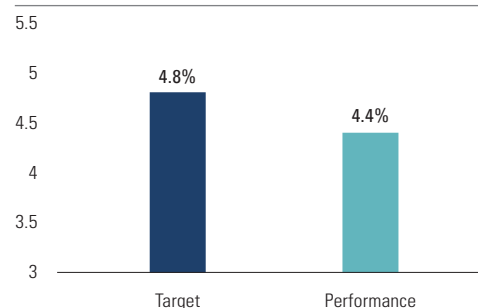
Stable Management of Default Rates

Despite declining exports to China due to the THAAD conflict and all-out restructuring of the shipbuilding and maritime industries which have aggravated the already difficult business conditions for SMEs, KOTEC stably managed a default rate of 4.4%, within the annual target of 4.8% in 2017.

Net Default Amount



Default Rate



Performance of Major Operations

(B) Obligor Rehabilitation Support

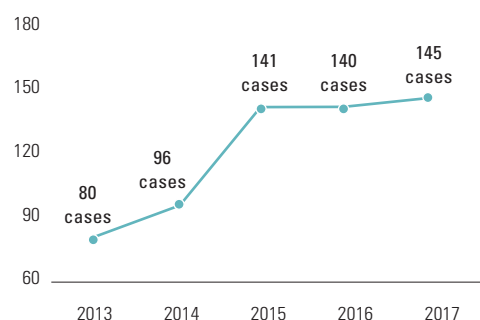
KOTEC shifted its paradigm of non-performing debt management from collection-oriented approaches to new systems which support the rehabilitation of obligors. The change seeks to promote a more forgiving restart culture in the finance environment. Since the implementation of the Restart Business Revival Support Guarantee in April 2012, KOTEC has steadily increased the support amount provided so as to fully serve its mandate as a public guarantee institution. In some cases, KOTEC executes debt restructuring or charge off to help obligors to continue or resume normal economic activities.

Expansion of Rehabilitation Support for Earnest-failure Businesses

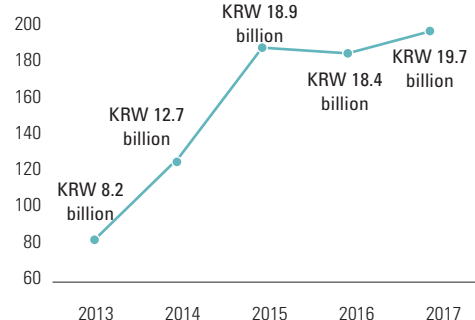
In the event that a single-debt obligor launches a new business, KOTEC will forgive his/her previous debt by up to 90%, and in the case of a multiple-debt obligor, KOTEC will cut the guarantee fee rate (1.2% → 1.0%).

In cooperation with the relevant institutions including Credit Counseling and the Recovery Service, KOTEC has streamlined the assessment process, reducing it from current two months to just one. In addition, KOTEC has established a Rehabilitation Assessment Committee which includes external experts in order to increase the transparency of these processes. From these efforts, KOTEC was able to provide rehabilitation supports of KRW 19.7 billion up by 7% year on year to 145 companies.

No. of Rehabilitation Guarantee Support Recipients



Amount of Rehabilitation Guarantee Support Provided



Expansion of Rehabilitation Opportunities by Reducing Debt Burden

In the course of debt restructuring, KOTEC focused on encouraging obligors to earnestly repay debts. The organization reduced the down payment required for installments, provided a fast track for people under government income subsidy programs, and exempted legal action fees. Through these efforts, obligors whose credits were restored by KOTEC's debt restructuring programs nearly doubled to 752.

In addition, KOTEC charged off KRW 431 billion of time-barred debts (which are over 5 years past the default period), which eliminated bad credit records from as many as 8,202 obligors so that they, once again, were eligible for new technology guarantees from KOTEC.

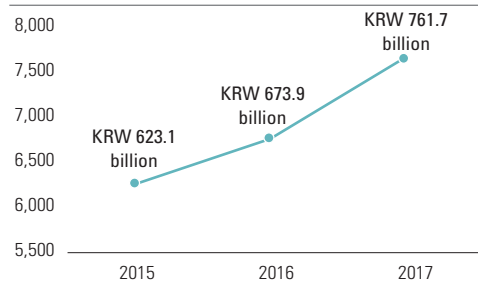
(C) Recovery of Uncollectible Claims

With claim collection conditions deteriorating as a result of exemptions or elimination of personal guarantee requirement for startups and increases in claims the recovery of which is very limited due to rehabilitation programs, KOTEC took exceptional measures to mitigate these hurdles.

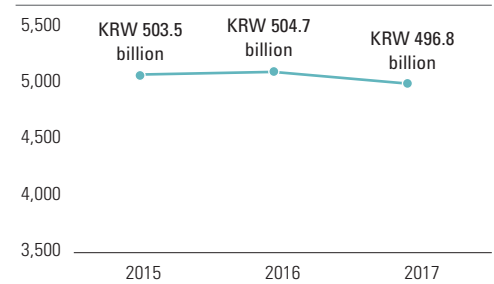
Establishment of an Efficient System for Claims Management

As the head count at the rehabilitation center significantly decreased from 153 to 126, KOTEC categorized the various claims into one of three categories based on their ease of collection in order to help staff focus their attention on the more collectable claims. The categories are ① Recoverable Claims ② Claims to be written off and ③ Claims to be sold. KOTEC then wrote off the less collectable claims and sold off the least collectible claims to maintain an efficient claims management system.

Amount of Claims Written off



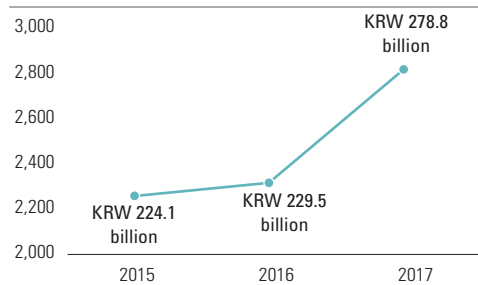
Amount of Written-off Claims Sold



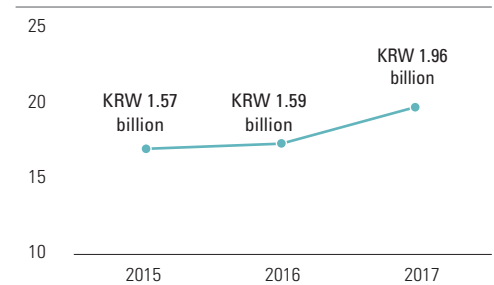
Efforts to Improve Recovery of Claims

KOTEC collected 64,722 cases of external obligor information (a 150% increase over the previous year), including debtor's deposit information (10,591 cases) from the Supreme Court, in order to improve debt collection efforts using internal information. KOTEC also launched a Special Campaign for Debt Collection to further support efforts. These initiatives helped KOTEC collect KRW 278.8 billion in uncollectable claims, an increase of 21% from the prior year. In addition, KOTEC focused efforts on talent management by redesigning the debt management certificate test, launching dedicated training programs and introducing company-wide best practices. As a result, per-staff collection amount jumped 23% from the previous year.

Amount of Claims Collected



Amount of Claims Collected per Staff Member



Performance of Major Operations

Others

(A) Recruitment

Recruitment

As per its mid-to-long term management plan, KOTEC investigated the staffing gap to assess needs and to implement a recruitment plan that could support the government's job creation policy. This is part of KOTEC's goal of growing into a comprehensive technology finance agency and supporting government efforts to address the problem of youth unemployment. KOTEC hired new employees based on the National Competency Standards (NCS) to nurture a merit-based culture. It also introduced a "Blind" recruitment process that does not allow evaluators to see applicants' school, age or gender in order to provide equal opportunities for all applicants.

By launching several new business projects (such as the TCB, Technology transfer and Cultural contents Businesses) and creating new positions (34 openings), KOTEC was able to hire 74 new full-time employees. The new staff members are all under 34 years of age, and the majority of positions were given to those from underprivileged backgrounds, including 6 beneficiaries of employment support and 32 local talents (35%).

As a company with high technology appraisal expertise, KOTEC values those with high-tech talents that can support stable technology financing. As such, it hired 10 new doctoral degree holders (14%), and 31 science/engineering majors (42%) in 2017, a significantly higher share of technology talents than other financial institutions.

In addition, KOTEC established a quota (35%) for female talents in recruitment and internships, and assigned female interviewers to encourage female employment. As a result of these changes, women accounted for 38% (28 people) of the 74 new hires in 2017. Furthermore, KOTEC hired 62 interns to provide jobs for young people and to give them an opportunity to grow their abilities; and gave preferential treatment to employment support beneficiaries, women and high-school graduates for permanent contracting positions.

New Full-time Employees in 2017

Unit: persons

Category	Total	Employment Support	Intern Experienced	Local	Women	Science Engineering
New Employees	74	6	12	32	28	31

Youth Intern Employment Record

Unit: persons

Category	Total	Disabled	Local	Female	High school Graduates
2017	62	13	42	43	10
2016	62	10	38	45	17
2015	52	7	28	35	8
Total	176	30	108	123	35

Permanent Contracting Positions

Unit: persons

Category	Total	Employment Support	Women	High-school Graduates
Permanent Contracting Positions	9	4	9	5

(B) Ethical Management, Human Rights Management

●● Ethical Management Practice

1. Establishing a clean organization culture by establishing ethical management based on participation and communication

A. Operating an ethical management system to eliminate unfair hiring processes and illegal contracts

Improving the transparency of hiring processes and fairness of contract practices

Type	Improvement	Audit Result
New full-time employees	Adopting a BLIND system, Inviting more interviewers from outside the company	ZERO unfair hires or illegal contract practices
R&D outsourcing contracts	Establishing standard procedures for R&D outsourcing contracts (January), preventing illegal soliciting	

Performance of Major Operations

B. Enhancing the internal control system as well as accessibility and anonymity to encourage reporting

On-going monitoring to prevent corruption and eliminate financial fraud

Type	Improvement
Expansion of Online Reporting Center	Operating the Anti-solicitation Reporting Center and Financial Fraud Reporting Center
KOTEC e-Audit System	Implementing the Integrated Online Internal Audit System to supervise overall guarantee practices (January)

2. Implementing multi-directional measures to improve integrity

Consistent and systematic anti-corruption campaigns to address corruption-prone practices

5 New Core Goals	Improvement
Increase user-oriented field training	Improve ethical mindsets and customer relations management
Launch anti-corruption campaigns	Develop a Clean Kibo image to clients
Visit 5 clean institutions for benchmarking	Introduce best practices, 1st grade for internal integrity
Promote education and PR on the Improper Solicitation and Graft Act	Encourage a fair and legal practices with zero breaches
Increase integrity training in on-site training programs	Inspire ethical acts, maximize trainings

3. Operating a Well-designed Education Program to Inspire Ethical Mindsets

Integrity education to improve understanding of the Improper Solicitation and Graft Act

Program	Details	Result
Go! Code of Conduct Quiz Contest	OX quiz on the "Code of Conduct" and "Improper Solicitation and Graft Act" and rewards giving	ZERO breaches
Special Training on Clean Ethics	Case-based face-to-face training by ethical management lecturers	
Self-training by Department/Office/Branch	Self-training by HQ and branch (95% participation)	

Experience-oriented, personalized and participative programs

Programs	Details	Result
Field experience activities	<ul style="list-style-type: none"> - On-site training to understand the clean public servant mind of Ori Lee, Won-ik - On-site training to understand the clean cultural heritage of Choosa Kim, Jung-hee 	Inspire the right mindsets for public employees
Clean innovation workshops	Visit to the Dasan Training Heritage Center, and discussion and presentation on the mindsets of public servants	
Training programs by life cycle	Integrity training for high-ranking officers and newly promoted and newly hired employees	Inspire ethical actions
Training tailored for job descriptions	Integrity training for corruption-prone positions, including HR and contract handlers	

●● Results of Ethical Management

- Designated as a Good Agency in the 2017 Public Transparency Assessment by the Anti-corruption and Civil Rights Commission (ACRC) for best practices in Anti-corruption Infrastructure Implementation for 4 consecutive years
- Improved public awareness of KOTEC employee integrity and clean practices

●● Human Rights Management Practices

1. Human Rights Education

Online trainings to promote awareness of and respects for human rights

Target	Details	Result
All employees	Video education on the history and concept of human rights (made by the National Human Rights Commission)	Inspire awareness of human rights

2. 2017 Human Rights Management Results

Self-inspection based on Human Right Management Guidelines and Checklist by the National Human Rights Commission

- Human rights management guidelines cover 10 topics and 38 items

Inspection results

- Applicable items: 31 (30 positive, 1 negative), Non-applicable items: 7

Applicable items (31)		Non-applicable items (7)
Positive (30)	Negative (1)	
<ul style="list-style-type: none"> • Implementation of a human rights management system (5) • Non-discrimination in hiring practices (4) • Freedom of association and collective bargaining (3) • Consumer rights protections (3) and other 15 items 	Implementation of a human rights management system (1)	<ul style="list-style-type: none"> • Freedom of association and collective bargaining (1) • Prevention of forced labor (1) • Prevention of child labor (2) • Protection of local residents (3)

- KOTEC will develop a system that integrates and continuously monitors the 1 item with negative results to ensure that human rights management takes root in the company's day-to-day business.

Performance of Major Operations

(C) Customer Satisfaction

•• Customer Satisfaction (CS) Practices

1. Enhancing CS capability through customized service improvement practices

A. Establishment and distribution of a “Customer satisfaction improvement plan”

Analyzing Public-service Customer Service Index (PCSI) 2016 results, and identifying action plans

2016 PCSI Result	2017 Action Plan	Result
Score: 89.3	Improve customer-oriented service practices	Recognized as an Excellent CS Institution
	Improve CS capabilities of frontline staff	
Grade: A	Improve CS activity monitoring and feedback	
	Streamline customer service processes	

B. Service quality improvement through standardized customer service practices

Creating and distributing an integrated manual, including customer service manual by job and response strategy

Action	Result
Provide services based on the standard customer service manual (ongoing)	Improve standardization of frontline service processes
Provide information services at branches when a customer visits (ongoing)	
Provide information based on the customer service manual for guarantee consulting (ongoing)	

C. Field CS consulting and training for customer satisfaction

Providing CS training for frontline staff and CS education to improve customer service mindsets

Program	Action
Customized consulting by branch	Visiting CS clinic (February and August)
Self-study CS training by branch	Self-study based on CS improvement measures (February and August)
Customer service training for frontline staff	CS training to interns and new employees (ongoing)
CS leaders' competence improvement	Emotional and communication skills training for CS leaders (March)

2. Improving customer service quality through VOC activities and feedback

A. Customer Focus Group Interviews (FGI)

Conducting FGIs with some 20 customers who scored especially high or low on an Online CS survey

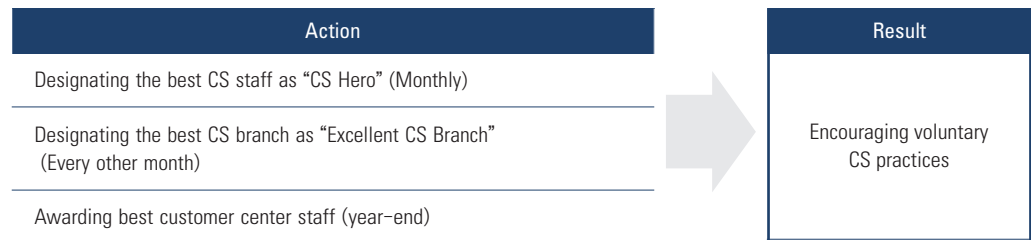
- Listening to service users' opinions through in-person interviews and analyzing their needs to use as the base data for CS improvement

B. Customer-oriented process improvement based on customer feedback

Listening to customer opinions about overall services, including inconveniences or complaints

- Gathering base data to improve CS processes and to identify 14 action steps to minimize inconveniences and complaints, and distributing the relevant plans to responsible departments/offices

C. Rewards for frontline staff for motivation



3. Promoting CS Efforts based on External Input

A. Call-based CS Survey (Perennial)

Providing monthly analysis to give feedback (or warning) to poor-CS performing staff

- Conducting a survey every week on customers who use KOTEC's new guarantee or certificate services

B. Online CS Survey (Biannual)

Developing a questionnaire similar to the PCSI survey to identify best practices for CS improvement

- Conducting a survey twice a year on customers who use KOTEC's new guarantee or certificate services

C. A/S call and On-site Visits by Branch Managers (Biannual)

Branch managers call or visit customers with low satisfaction to understand their needs or complaints

Performance of Major Operations

●● CS Results

Measure	2015	2016	2017
PCSI	Grade A	Grade A	Grade A
Online CS Survey	90.5	94.2	94.5
Call-based CS Survey	98.7	98.8	99.2

(D) Risk Management

KOTEC overhauled and revamped its risk management infrastructure, including its risk assessment model, early warning model and integrated risk management system, based on internal/external big data and new statistics schemas in order to keep up with developments from the 4th Industrial Revolution.

Given the prolonged economic uncertainties at home and abroad, KOTEC bolstered its crisis management system by establishing challenging risk targets, executing rational target management practices, adopting a risk positioning system and improving the crisis management manual so as to establish a stable operation base for technology finance operation and enhance asset soundness.

1. Improving risk prediction capability by revamping the risk management infrastructure

While proactively accommodating feedback from branches (such as excluding unreasonable risk factors, etc.), KOTEC redesigned its risk management system to better predict default risks based on internal/external big data and up-to-date statistics models.

A. Risk Assessment Model

The new model utilizes internal and external big data, such as long-term financial information, VAT, customer and loan rates, while excluding unseasonable risk factors (such as the number of credit cards issued, etc.).

Advanced Reasoning and Judgement

Indicator	Old model (A)	New model (B)	Improvement (B-A)
AR*	56.04%	65.05%	9.01%p ↑

*AR: Indicator of arithmetic reasoning of a model

B. Early Warning Model

KOTEC introduced Window Dressing Indicators and increased filtering items to 40 to more quickly and effectively identify default risks.

Improved Early Detection

Indicator	Old model (A)	New model (B)	Improvement (B-A)
Sensitivity	26.54%	37.70%	11.16%p ↑

* Sensitivity: The ratio of actual default cases among companies under follow-up supervision

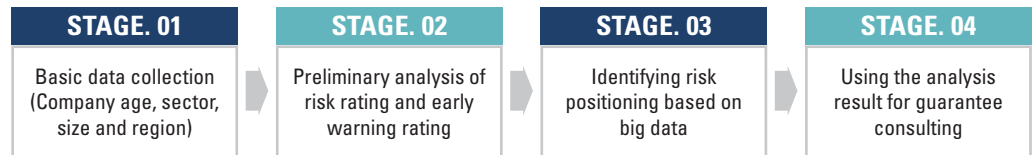
C. Integrated Risk Management System

KOTEC finetuned the period of time to apply in calculating bankruptcy probability and claim payment rate to improve errors involved in loss risk of guarantee assets. The company also introduced supplementary indicators in addition to the main indicator of aggregate loss to ensure better, more stable risk prediction.

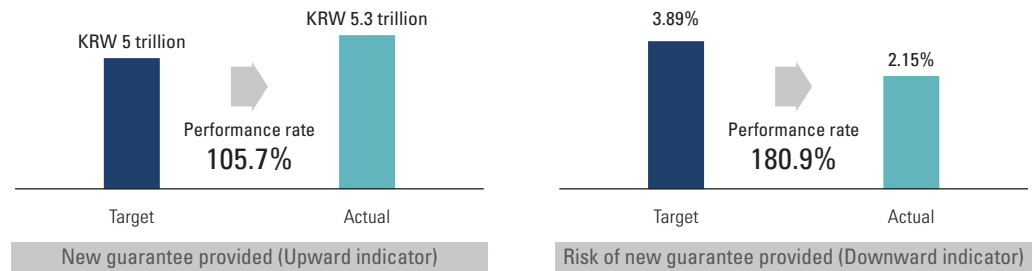
2. Preemptive Risk Management to Establish a Stable Operating Base for Technology Financing

KOTEC pushed forward strategic and reasonable risk management by focusing its guarantee resources on policy-driven guarantees that could trigger ripple effect on future economic growth. These efforts resulted in KOTEC overperforming on its guarantee provisions target. In its enterprise-wide effort to minimize debt insolvency, KOTEC implemented a new big data-based risk positioning system and refined its follow-up monitoring system to strengthen its early warning system for insolvency of guaranteed firms.

Risk Positioning System



Overperformance of Guarantee and Risk Targets by Systematic Risk Management Practice under Technology Finance Policy



Performance of Major Operations

(E) IT Operations & Management

1. Replacing the main server (SuperDome) to improve system processing speeds

KOTEC replaced its old main server (SuperDome) with a new model (twice as fast and more stable) to improve work efficiency.

Main Server Specifications

	Details	Upgrade
Model	HP SuperDome2(SD2)	Newer model
CPU	Itanium4 2.53GHz	2 times faster
Memory	768GB	2.8 times larger
Disc	300GB × 98	
OS	HP-UX 11.31	Same OS

Before replacing the server, KOTEC thoroughly studied and tested the compatibility and data transfer safety between the new server and existing DBMS and solutions to enable the completion of the replacement project within the scheduled time frame.

2. Database (DBMS) Update

KOTEC updated its old database system (Oracle 10g) which was no longer supported by its manufacturer to a new version (Oracle 11g) to improve system performance and stability.

DBMS Upgrade Summary

Category	Before	After	Improvement
Online Service	480 seconds	222s	54%
Batch Service	18,820 seconds	13,051s	31%
Statistics Job	156 minutes	73m	114%

*Improvement computation: (Response speed before upgrade - Response speed after upgrade) / Response speed after upgrade x 100

After the upgrade, online, batch and statistics work performance improved 66% on average, contributing to an improvement in CS and internal work efficiency.

3. National ID Encryption System to protect personal information

KOTEC implemented a verified encryption solution to ensure the security of customer data and encrypted all national identification data in its system. These steps serve to prevent secondary damage in the case of personal information breaches and to improve KOTEC's reliability.

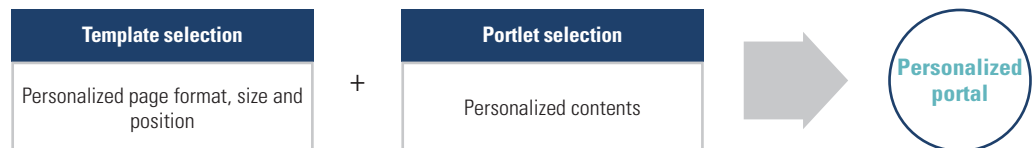
Needs for Personal Information Encryption and Implementation

Needs		Implementation	
Prevention of Personal Information Breach	Serious incidents including personal information breaches or hacking (such as personal information leaks by the 3 major credit card companies)	Encryption Subject	National ID database: 3 million cases National ID processing log files in the server
National Policy	Encryption mandated by the Personal information Protection Act (by Dec. 31, 2017)	Safety	Adopted the encryption algorithm verified by the National Intelligence Service Korea
		Performance Maintenance	Upgraded the server and DBMS to the latest models to ensure stable performance

4. Personalized Portal System

KOTEC implemented a customizable portal designed to improve work efficiency by enabling users to personalize the display to best meet their individual needs and preferences.

Personalized Portal System



5. Performance of IT Operations

KOTEC was recognized by external evaluations for its excellent information security and IT operation practices in 2017.

Evaluation	Conducted by	KOTEC	Note
Diagnosis of personal information protection practices of public agencies	MOI	93.7 (out of 100)	Average public agency score: 80.05
Maturity of Information Resource Management (Enterprise Architecture, EA)	MOI	5.0 (out of 5.0)	

*MOI: Ministry of the Interior

Performance of Major Operations


(F) Corporate Social Responsibility (CSR)

1. Overview

KOTEC is taking the initiative to create shared value (CSV) by establishing shared social responsibility with all employees and providing support for special interest groups (e.g. SMEs) and socially vulnerable or marginalized people. The company's CSR goal is to set a precedent for outstanding socially responsible and sustainable management.

2. Strategy

In 2017, KOTEC promoted CSR activities that aligned with the company's core values, pursuing further cooperation with local agencies to help grow local communities. The company also worked to develop the quality of its CSR programs.

Brand Image	Hope Platform KIBO 		
Goal	CSV-centered CSR programs	Startup Talent Incubator	Personalized/Close Social CSR
2017 Action Plan	Develop core competency-related CSV programs	Enhance customized startup education programs	Provide beneficiary-oriented CSR programs
Competent Org.	CSR-responsible department + KIBO Love Execution Committee + KIBO Love Volunteer Group		
Feedback	Listening to feedback through Internal/external satisfaction survey ■ Setting CSR directions and practicing personalized CSV activities		

3. Action Plans and Performance

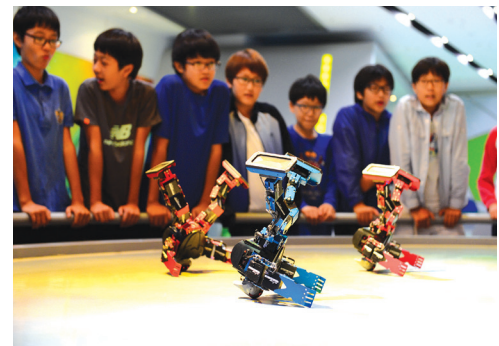
Invigorating local economies and fulfilling social responsibilities based on core competency

Programs	Details
Sponsoring the Busan Social Enterprise Support Fund	<ul style="list-style-type: none"> Signed an MOU to invigorate the local economy and social economy (Nov. 2017) Pledged to raise support funding of KRW 5 billion with 6 other public agencies Finance, sales and sales channel support, creation of a socio-economic ecosystem, etc.
Promoting preferential guarantees for social enterprises	<ul style="list-style-type: none"> Preferential guarantees for social enterprises to increase support for vulnerable people Lower guarantee fees, higher guarantee ratios, and preferred support in technology and management consulting
Promoting social value by supporting climate change / environmental companies	<ul style="list-style-type: none"> Launched guarantees focused on GHG reduction and climate change technology (July 2017) Signed an MOU with UNIDO to help Korean climate technology firms with their overseas penetration (Nov. 2017)

Supporting the success of the 2018 PyeongChang Winter Olympics	<ul style="list-style-type: none"> Launched the “Financial institution agreement guarantee”, etc., to support the success of the 2018 PyeongChang Winter Olympics Guarantee fee reduction, preferential interest rates, higher guarantee ratio and exemption of success fee
Encouraging education donation to the Busan Finance Museum Road	<ul style="list-style-type: none"> Co-operated education donation programs with the Busan Municipal Government etc. (7 institutes) Contributed to the development of creative talents through financing and science education
Preferential hiring of local talents	<ul style="list-style-type: none"> Co-hosted an introductory seminar with other 6 public agencies located in Busan Munhyeon Complex (Dec. 2017) Participated in 5 recruiting seminars, including one at Pusan National University



Busan Social Enterprise Support Fund



Education donation to the Busan Finance Museum Road

Further startup education support to nurture tech entrepreneurs

Programs	Details
Kibo Venture Startup Class	<ul style="list-style-type: none"> Helping pre-entrepreneurs (equipped with technology and ideas) to successfully launch venture businesses / tech companies
Youth Technology Startup Class	<ul style="list-style-type: none"> Practical training program that helps young pre-entrepreneurs to commercially realize their creative ideas
Specialized Class for Restart CEOs	<ul style="list-style-type: none"> Providing practical knowledge on business management, including HR, labor relations, patent law and tax accounting Special lecture on how to overcome failure trauma and on how to become a successful CEO
Special Lecture by KOTEC-Excellent Tech Companies for Successful Startup Preparation for College Students	<ul style="list-style-type: none"> Providing technology experience and startup education for college students in cooperation with other tech companies

Performance of Major Operations



Youth Technology Startup Class



Soup Kitchen for Gamman Social Welfare Center

Beneficiary-oriented personalized CSR activities

Program	Details
Vocational training for the disabled and underprivileged	<ul style="list-style-type: none"> Confectionary / baking classes and career experience education for the disabled and underprivileged teenagers Job creation by hiring lecturers from among the underprivileged
Wish gifts for underprivileged children	<ul style="list-style-type: none"> Wish gifts for underprivileged children and bicycle assembly support Integrated as a CSR program in the new employee training course
School uniform support for children from low income families	<ul style="list-style-type: none"> Co-sponsoring, with the Labor Union (1:1 matching fund), to provide school uniforms and supplies for children from low-income families
Sponsoring 1-3 generation leisure experiences through "We Together"	<ul style="list-style-type: none"> 1 night, 2-day camp together with senior citizens from low-income backgrounds (1st generation) and high school students (3rd generation) and providing support for leisure activities
Volunteer activities for rural areas and welfare centers	<ul style="list-style-type: none"> Volunteer activities for farming villages in Seoul / Gyeonggi and Busan / Gyeongnam areas Soup kitchen for the Gamman Social Welfare Center
KIBO Friends 4.0 Creative Science Class	<ul style="list-style-type: none"> Creative science education for children from low-income families by providing science lab experiences and science classes Special lecture on intelligent robots by KOTEC's engineers (Ph.D.)



Volunteering in a farming village



Creative Science Class KIBO Friends 4.0 Lecture

(G) Global Exchange and Cooperation

KOTEC has worked to actively promote the excellence and globalization of KTRS by utilizing the company's extensive network with overseas institutions and by driving human resources and information exchanges with them.

KOTEC is taking the initiative to globally promote KTRS in order to enhance recognition of it. In its attempt to help local SMEs seeking global expansion and upgrade its technology rating tools, KOTEC is proactively seeking global cooperation through means such as the KTRS Pilot Test with the European Commission (EC) and MOU signing with the European Investment Bank (EIB). Through these efforts, KOTEC is establishing a bridgehead for expanding its global business and globalizing its technology financing system.

As a leader in the government-led initiative, Knowledge Sharing Program (KSP), KOTEC has worked to transfer KTRS to Vietnam and Peru, and has helped these countries build up their technology financing capacity. In cooperation with prominent international organizations such as WIPO, KOTEC conducted a few joint technology transfer projects, while sharing climate technology information with them. The company also worked together with some developing countries and shared its climate technology financing expertise and discussed measures to help Korean climate tech firms find business opportunities in those countries.

Overseas institutions are already paying keen attention to KTRS and are actively seeking out KOTEC to gain insight on KTRS. KOTEC will continue to broaden and deepen its work in international exchanges to promote KTRS as a best practice, enabling the company to become a true Global Technology Financing Leader.

Performance of Major Operations

1. Major Achievements



Signing an MOU with EIB-UNIDO



Participating in the 30th ACSIC Conference



Participating in the EC Meeting in 2017



Participating in the WIPO Innovate 4 Water Forum



Participating in the 27th ACSIC Training Program



Visited by Singapore Continuing Education and Training (CET) Centre

2. Global Exchange Activities

Overseas institutions that have visited KOTEC during the year

Month	Institution	Exchange Details
Mar.	Ministry of Finance & Public Service of Jamaica, National Water Commission of Jamaica, Inter-American Development Bank	Introducing KOTEC's technology finance system and management evaluation practices
Jun.	Central Bank of Vietnam, Ministry of Finance of Vietnam, NATIF	Introducing KOTEC's technology guarantee and finance system
Jun.	FOGAPI of Peru	Introducing KOTEC's technology guarantee and finance system
Aug.	Thailand Credit Guarantee Corporation (TCG)	Introducing KOTEC's technology guarantee and finance system
Nov.	Minister of Science and Technology of Thailand	Discussing how to operate the Thai Technology Appraisal Model
Nov.	Singapore CET Centre	Introducing KOTEC's technology innovation, startup and R&D support, etc.
Dec.	Europe Investment Bank (EIB)	Discussing KTRS Pilot Test schedule and details
Dec.	European Commission (EC)	Discussing the development and application of a technology rating model

KOTEC participation in international conferences

Month	Institution	Exchange Details
Apr.	International Financial Cooperation Forum of Indonesia	Introducing KOTEC's work and KTRS
May.	The 50th ADB Annual General Assembly	Introducing KOTEC's work and building a global network
May.	2017 AECM General Assembly	Networking with European and other overseas guarantee agencies
Jun.	WIPO Innovate 4 Water Forum	Introducing KOTEC's work and pursuing opportunities for water-related technology transfers
Jul.	2017 IIA International Conference	Introducing KOTEC's work and pursuing audit system improvements
Jul.	International Financial Cooperation Forum of Mongolia	Introducing KOTEC's support for innovative startups
Sep.	The 27th ACSIC ATP	Exchanging with overseas institutions a credit guarantee system information, etc.
Sep.	UN ESCAP-International Financial Cooperation Body Forum	Introducing KOTEC and its technology finance system, and building a global network
Nov.	The 30th ACSIC Meeting	Exchanging with overseas institutions a credit guarantee system information, etc.

APPENDIX

04



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Financial Position Statement

Summary of Statement of Financial Position 2017

As of December 31, 2017

Unit: KRW million

Assets		Liabilities and Net Assets	
Item	Amount	Item	Amount
I. Current Assets	2,303,584	I. Current Liabilities	167,922
Cash and Cash Equivalents	13,666	Deferred Revenue	151,562
Short-term Financial Instruments	1,281,961	Others	16,360
Short-term Investment Securities	747,921	II. Long-term Liabilities	1,005,032
Other current assets	260,036	Reserves for Claim Payment	912,020
II. Investment Assets	289,550	Reserves for Paying Claims on P-CBO Guarantee	64,016
Long-term Financial Instruments	71,000	Accrued Liability for Retirement Allowance	28,996
Long-term Investment Securities	215,309	III. Other Non-Current Liabilities	595
Other Investment assets	3,241	Total Liabilities	1,173,549
III. Tangible Properties	141,253		
Land	47,125	I. Basic Net Assets	10,360,891
Buildings	87,566	Basic Fund at the Time of Foundation	21,768
Machinery	2,697	Contributions	10,339,123
Furniture, fixtures, and transport equipment etc.	3,865	II. Accumulated Reserves and Surpluses	(8,401,050)
IV. Intangible Properties	2,674	Retained Earnings Carried Over from the Previous Year	(8,240,981)
Industrial Property Rights	2,674	Other Changes in Net Assets	50,800
V. Other Non-Current Asset	408,697	Financial Operation Results	(210,869)
Claim for Indemnity	345,032	III. Net Asset Adjustment	12,368
Preserved Claim	221	Gain and Loss on Investment Valuation	12,368
Deposits and others	63,444	Total Net Assets	1,972,209
Total Assets	3,145,758	Total Liabilities and Net Assets	3,145,758

Summary of Statement of Financial Operations 2017

From January 1 to December 31, 2017

Unit: KRW million

Item	Amount		
	Total Cost	Income	Net Cost
I. Program Net Cost	1,066,998	(292,850)	774,148
Industrial Financial Support	1,066,998	(292,850)	774,148
II. Management Cost			49,151
Labor Cost			24,081
Expenses, other			25,070
III. Non Allocated Expenses			38,257
Asset Impairment Loss and others			38,257
IV. Non Allocated Income			125,247
Interest income and others			125,247
V. Net Operation Cost (I+II+III-IV)			736,309
VI. Non Exchange Revenue			525,440
Contribution Revenue			483,180
Other Sourcing and Transfer			42,260
Operation Result (=V-VI)			210,869

Summary of 2017 Statement of Changes in Net Assets

From January 1 to December 31, 2017

Unit: KRW million

Item	Amount			
	Net Asset	Accumulated Reserve and Surplus	Net Asset Adjustment	Total
I. Basic Net Asset	10,360,891	(8,240,981)	82,427	2,202,337
Reported Amount	10,360,891	(8,240,981)	82,427	2,202,337
II. Statement of Operation	-	210,869	-	210,869
III. Adjustment Accounts	-	50,800	(70,059)	(19,259)
Gain and Loss on Investment Securities Valuation	-	-	(71,357)	(71,357)
Gain on Asset Revaluation	-	-	1,298	1,298
Other Gain and Loss on Net Asset	-	50,800	-	50,800
IV. Ending Balance of Net Asset (I - II + III)	10,360,891	(8,401,050)	12,368	1,972,209

Board of Directors

Executive Directors

Kang Rack-kyu

Executive Vice President



Park Ki-pyo

Executive Director



Kwag Young-cheol

Executive Director



NON-EXECUTIVE DIRECTORS



Kim Man-doo

Non-Executive Director



Lee Jong-woo

Non-Executive Director



Bae Byung-il

Non-Executive Director



Lee Ki-woo

Non-Executive Director

Executive Directors

Hwang Dae-hyun

Executive Director



Yoo Ki-hyeon

Executive Director



Choi Sung-soo

Chief Audit Executive



NON-EXECUTIVE DIRECTORS



Kim Tae-young

Non-Executive Director



Lee Dae-sik

Non-Executive Director



Lee Ji-eon

Non-Executive Director



Board of Policy (BOP)

Members of the KOTEC BOP

December 2017

BOP established based on the Korea Technology Credit Guarantee Fund Act, Article 17

Type		Position			Note
Chair		KOTEC Chairman & President			
Appointed Members (5)	Appointed by the MSS Minister (1)	MSS	Venture Innovation Policy Officer	Lee, Jae-hong	
	Appointed by the MOSF Minister (1)	MOSF	Economic Budget Review Officer	Ahn, Do-gul	
	Appointed by the head of FSC (1)	FSC	Head of the Financial Policy Bureau	Kim, Tae-hyeon	
	Appointed by the Governor of IBK (1)	IBK	Executive Vice President	Hwang, Young-seok	
	Appointed by the Governor of KB (1)	KB Kookmin Bank	Senior Vice President	Kim, Nam-il	
Commissioned members (7)	Commissioned by the MSS Minister in consultation with FSC executives or the executive management of financial institutions (3)	Shinhan Bank	Executive Vice President	Choi, Byeong-hwa	
		Woori Bank	Vice President	Lee, Dong-yeon	
		Hana Bank	Executive Vice President	Jeong, Jeong-hee	
	Commissioned by the KORACHAM chairman (1)	KORACHAM	Executive Vice Chairman	Kim, Joon-dong	
	Commissioned by the KBIZ Chairman (1)	KBIZ	Executive Vice Chairman	-	Empty
	Commissioned by the MSS minister in consultation with MSIT minister technology experts (2)	KOITA	Vice President	Kim, E-hwan	
		Commercialization Promotion Agency for R&D Outcomes	President	Cho, Yong-beom	

2017 Highlights

Date	Highlights
Jan. 16	Mr. Kim, Kyu-ok, 12th Chairman & President was Inaugurated
Feb. 10	Hosted the 1st 2017 Management Strategy Workshop (HR Development Center)
Feb. 23	Signed a SmartFactory Finance Support Agreement with MOTIE and Woori Bank
Apr. 1	Organized a hiking event in celebration of the company's 28th anniversary (Sokri Mountain)
Apr. 4	Hosted the Big Data-based Innovative Model Development Contest
Apr. 5	Hosted the 1st 2017 Youth Technology Startup Class (Seoul)
May 15	Hosted the 1st 2017 Venture Startup Class (Seoul)
May 20	Hosted the 1st 2017 Technology Credit Appraiser Test (Grade 1, Grade 3)
Jun. 14	Signed an MOU with PPS on venture / startup sales channel support
Jun. 22	Hosted the 2nd 2017 Youth Technology Startup Class (Jeju)
Jun. 22	Signed an MOU with KOTEA to collectively help excellent technology firms with their overseas penetration
Jul. 19	Hosted the 1st 2017 Busan Venture School
Jul. 27	Hosted the 2nd 2017 Management Strategy Workshop (Busan H.Q.)
Aug. 17	Hosted an opening ceremony for the Gyeonggi Cultural Contents Finance Center
Aug. 29	Hosted with KEPRI a technology transfer seminar at COEX
Sep. 12	Hosted with KAIST a technology transfer seminar on the 4th Industrial Revolution
Sep. 18	Signed an MOU with KEPCO on the 4th Industrial Revolution and energy industry growth promotion
Sep. 20	Signed an MOU with Busan-Ulsan-Gyeongnam TechnoPark on 4th industrial revolution and co-creation of jobs
Sep. 22	Signed an MOU with MCST & IBK to support contents SMEs
Sep. 22	Designated as the best agency for HR development (re-certification)
Sep. 25	Signed an MOU with POCOG and KEB Hanabank on financial support
Nov. 2	Cooperated with UNIDO to help the global entry of domestic climate technology companies
Nov. 2	Hosted an international symposium in commemoration of the 20th anniversary of its technology appraisal business
Nov. 3	Launched the Open Innovation Committee
Dec. 8	Signed an MOU with LH to promote job creation
Dec. 27	Co-hosted a company introduction seminar with public agencies in Munhyun Innovative Newtown
Dec. 28	Hosted a Year-end Music Concert for visually-impaired people

Branch Network

Center	Address	Tel
Gyeonggi Business Headquarter	6th Fl., Suwon Regional Office of National Pension Service, B/D, 19, Hyowon-ro 307beon-gil, Paldal-gu, Suwon-si, Gyeonggi-do	031)8006-1500
Seoul Business Headquarter	41st Fl., Korea Life Insurance 63 B/D, 63-ro, Yeongdeungpo-gu, Seoul	02)3215-5900
Busan Business Headquarter	7th Fl., KOTEC B/D, 33, Munhyeongeumyung-ro, Nam-gu, Busan	051)606-7433
Incheon Business Headquarter	10th Fl., Songdocentroad B B/D, 323, Incheon tower-daero, Yeonsu-gu, Incheon	032)830-5600
Chungcheong Business Headquarter	2nd Fl., KOTEC B/D, 141, Dunsanseo-ro, Seo-gu, Daejeon	042)610-2231
Honam Business Headquarter	6th Fl., Mudeungsantower, 80, Jukbong-daero, Seo-gu, Gwangju	062)360-4662
Daegu Business Headquarter	10th Fl., S-Cube B/D, 2598 Dalgubeol-daero, Suseong-gu, Daegu	053)251-5600
Central Technology Appraisal Institute	11th Fl., Living Tower of Highbrand B/D, 16, Maeheon-ro, Seocho-gu, Seoul	02)2155-3753
Gasan Technology Appraisal Center	Rm. 1906, STX-V Tower, 128, Gasan Digital-1-ro, Geumcheon-gu, Seoul	02)818-4300
Gangnam Technology Appraisal Center	5th Fl., Dongwoo B/D, 328, Teheran-ro, Gangnam-gu, Seoul	02)2016-1300
Gangneung Technology Appraisal Center	8th Fl., Donga B/D, 2110, Gyeonggang-ro, Gangreung-si, Gangwon-do	033)640-8700
Gyeongsan Technology Appraisal Center	1st Fl, Gyeongbuk Techno Park HQ building, 27 Sampoong-ro, Gyeongsan-si, Gyeongsangbuk-do	053)859-9000
Gwangju Technology Appraisal Center	6th Fl., Mudeungsantower, 80, Jukbong-daero, Seo-gu, Gwangju	062)360-4600
Gwangju-Seo Technology Appraisal Center	3rd Fl., Industrial Bank of Korea B/D, 240, Mujin-daero, Gangsan-gu, Gwangju	062)970-9200
Guro Technology Appraisal Center	Rm. 1801~1807, JNK Digital tower, 105, Digital-ro 26gil, Guro-gu, Seoul	02)6124-6400
Gumi Technology Appraisal Center	3rd Fl., Industrial Bank of Korea, 124, Suchul-daero, Gumi-si, Gyeongsangbuk-do	054)440-0730
Gimpo Technology Appraisal Center	Rm. 805 Shinhan Plaza, 113, Gimpohangang-4-ro, Gimpo-si, Gyeonggi-do	031)980-8600
Gimhae Technology Appraisal Center	4th Fl., Industrial Bank of Korea B/D, 55, Naeoejungang-ro, Gimhae-si, Gyeongsangnam-do	055)330-2100
Noksan Technology Appraisal Center	3rd Fl., Exchange Bank of Korea B/D, 20, Noksansandan-335-ro, Gangseo-gu, Busan	051)970-0900
Daegu Technology Appraisal Center	10th Fl., S-Cube B/D, 2598, Dalgubeol-daero, Suseong-gu, Daegu	053)251-5600
Daegu-Buk Technology Appraisal Center	5th Fl., Hwaseong B/D, 130, Wondae-ro, Buk-gu, Daegu	053)350-9500
Daegu-Seo Technology Appraisal Center	12th Fl., Grand M Tower, 141, Yongsan-ro, Dalseo-gu, Daegu	053)550-1400
Daejeon Technology Appraisal Center	1st Fl., KOTEC B/D, 141, Dunsanseo-ro, Seo-gu, Daejeon	042)610-2201
Daejeon-Dong Technology Appraisal Center	2nd Fl., Yuanta Securities, 540, Daejeong-ro, Jung-gu, Daejeon	042)250-0700
Dongnae Technology Appraisal Center	10th Fl., Geumjeong Tower, 1925, Jungang-daero, Geumjeong-gu, Busan	051)510-6900
Masan Technology Appraisal Center	2nd Fl., Industrial Bank of Korea B/D, 323, Haeandae-ro, Masanhappo-gu, Changwon-si, Gyeongsangnam-do	055)249-9799

Center	Address	Tel
Mokpo Technology Appraisal Center	2nd Fl., Industrial Bank of Korea B/D, 25, Ogam-ro, Mokpo-si, Jeollanam-do	061)288-1500
Busan Technology Appraisal Center	3rd Fl., KOTEC B/D, 33, Munhyeongeumyung-ro, Nam-gu, Busan	051)606-7686
Bucheon Technology Appraisal Center	4th Fl., NH Bank B/D, 217, Sohyang-ro, Bucheon-si, Gyeonggi-do	032)620-8800
Bupyeong Technology Appraisal Center	2nd Fl., Industrial Bank of Korea B/D, 353, Buheung-ro, Bupyeong-gu, Incheon	032)509-1700
Sasang Technology Appraisal Center	2nd Fl., Hana Bank B/D, 271, Hakgam-daero, Sasang-gu, Busan	051)320-3400
Saha Technology Appraisal Center	3rd Fl., Saus B/D, 336, Hasinjungang-ro, Saha-gu, Busan	051)250-7808
Seoul Technology Appraisal Center	41st Fl., Korea Life Insurance 63 B/D, 50, 63-ro, Yeongdeungpo-gu, Seoul	02)3215-5900
Seocho Technology Appraisal Center	4th Fl., Danwoo B/D, 181, Banggae-ro, Seocho-gu, Seoul	02)2224-3100
Seongnam Technology Appraisal Center	6th Fl., Gaon Media B/D, 884-3, Seongnam-daero, Bundang-gu, Seongnam-si, Gyeonggi-do	031)750-4800
Songpa Technology Appraisal Center	Rm. 601, IT Venter Tower East B/D, 135, Jung-daero, Songpa-gu, Seoul	02)3400-7900
Suwon Technology Appraisal Center	6th Fl., Suwon Regional Office of National Pension Service, B/D, 19, Hyowon-ro 307beon-gil, Paldal-gu, Suwon-si, Gyeonggi-do	031)8006-1500
Suncheon Technology Appraisal Center	6th Fl., Industrial Bank of Korea B/D, 152, Chunghyo-ro, Suncheon-si, Jeollanam-do	061)729-9333
Sihwa Technology Appraisal Center	3rd Fl., KT&G Ansan Branch, 361, Okgugongwon-ro, Siheung-si, Gyeonggi-do	031)496-5911
Asan Technology Appraisal Center	3rd Fl., Jangho B/D, 25, Baebang-ro, Baebang-eup, Asan-si, Chungcheongnam-do	041)538-5900
Ansan Technology Appraisal Center	9th Fl., Kyobo B/D, 366, Hwarang-ro, Danwon-gu, Ansan-si, Gyeonggi-do	031)8084-5300
Anyang Technology Appraisal Center	2nd Fl., National Health Insurance B/D, 182, Gwanpyeong-ro, Dongan-gu, Anyang-si, Gyeonggi-do	031)450-1600
Yangsan Technology Appraisal Center	3rd Fl., Industrial Bank of Korea B/D, 216, Jungang-ro, Yangsan-si, Gyeongsangnam-do	055)370-4700
Yongin Technology Appraisal Center	2nd Fl., 1349, Jungbu-daero, Cheoin-gu, Yongin-si, Gyeonggi-do	031)8020-4000
Ulsan Technology Appraisal Center	2nd Fl., Ulsan Economic Promotion Agency B/D, 915, Saneop-ro, Buk-gu, Ulsan	052)220-7900
Wonju Technology Appraisal Center	3rd Fl., NH Bank B/D, 115, Wonil-ro, Wonju-si, Gangwon-do	033)730-8300
Uijeongbu Technology Appraisal Center	4th Fl., Seokcheon B/D, 44, Uigeong-ro, Uijeongbu-si, Gyeonggi-do	031)820-0300
Iksan Technology Appraisal Center	7th Fl., SK B/D, 39, Iksan-daero 16gil, Iksan-si, Jeollabuk-do	063)840-3100
Incheon Technology Appraisal Center	10th Fl., Songdoentroad B B/D, 323, Incheontower-daero, Yeonsu-gu, Incheon	032)830-5600
Incheon-central Technology Appraisal Center	1st Fl., KOTEC B/D., 30, Yesul-ro 152gil, Namdong-gu, Incheon	032)420-3500
Ilsan Technology Appraisal Center	15th Fl., M-City Tower, 195, Baekma-ro, Ilsandong-gu, Goyang-si, Gyeonggi-do	031)931-7200
Jeonju Technology Appraisal Center	11th Fl., Jeonbuk B/D, 566, Baekje Blvd., Deokjin-gu, Jeonju-si, Jeollabuk-do	063)270-9800
Jongno Technology Appraisal Center	2nd Fl., Daewoo B/D, 30, Saemunan-ro 3-gil, Jongno-gu, Seoul	02)2280-4800
Jinju Technology Appraisal Center	4th Fl., Industrial Bank of Korea B/D, 310, Daesin-ro, Jinju-si, Gyeongsangnam-do	055)750-1111
Changwon Technology Appraisal Center	3rd Fl., Industrial Bank of Korea B/D, 38, Yongji-ro, Seongsan-gu, Changwon-si, Gyeongsangnam-do	055)210-4099
Cheonan Technology Appraisal Center	Rm. 802, 215, Gwangjang-ro, Seobuk-gu, Cheonan-si, Chungcheongnam-do	041)629-5913

Branch Network

Center	Address	Tel
Cheongju Technology Appraisal Center	6th Fl., Sannamdong Intem Plaza, 76, Sannam-ro, Seowon-gu, Cheongju-si, Chungcheongbuk-do	043)290-9513
Chuncheon Technology Appraisal Center	5th Fl., Industrial Bank of Korea B/D, 45, Geumgang-ro, Chuncheon-si, Gangwon-do	033)240-2800
Chungju Technology Appraisal Center	3rd Fl., Hyundai Motors B/D, 10, Aehyang-ro, Chungju-si, Chungcheongbuk-do	043)849-8600
Pyeongtaek Technology Appraisal Center	3rd Fl., Vision Plaza, 48, Pyeongtaek-1-ro, Pyeongtaek-si, Gyeonggi-do	031)659-8700
Pohang Technology Appraisal Center	3rd Fl., Industrial Bank of Korea B/D, 369, POSCO-daero, Nam-gu, Pohang-si, Gyeongsangbuk-do	054)271-4900
Hwaseong Technology Appraisal Center	#C-207, Urideul Distribution Town, 934-4, Sicheong-ro, Paltan-myeon, Hwaseong-si, Gyeonggi-do	031)299-8200
Gwangju Technology Convergence Center	6th Fl., Mudeungsantower, 80, Jukbong-daero, Seo-gu, Gwangju	062)360-4654
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Daegu Technology Convergence Center	12th Fl., Grand M Tower, 141, Yongsan-ro, Dalseo-gu, Daegu	053)550-1450
Daejeon Technology Convergence Center	3rd Fl., 141, Dunsanse-ro, Seo-gu, Daejeon	042)610-2279
Busan Technology Convergence Center	3rd Fl., 33, Munhyeongeumyung-ro, Nam-gu, Busan	051)606-7327
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Gyeonggi Cultural Contents Finance Center	5th Fl., Korean Semiconductor Industry Association Building, 182, Pangyoyeok-ro, Bundang-gu, Seongnam-si, Gyeonggi-do	031)725-7857
Busan Cultural Contents Finance Center	Busan Visual Industry Center, 39, Centum seo-ro, Haeundae-gu, Busan	051)726-1300
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Ochang Office of Cheongju Technology Appraisal Center	Rm 301, Future Convergence Technology Tower of Chungbuk Technopark, 76, Research Complex Road, Cheongwon-gu, Cheongju-si, Chungcheongbuk-do	043)251-1503
Osan Office of Suwon Technology Appraisal Center	2nd Fl., Citibank B/D, 84, Seongho-daero, Osan-si, Gyeonggi-do	031)369-5505
Pangyo Office of Seongnam Technology Appraisal Center	2nd Fl., KSIA B/D, 182, Pangyoyeok-ro, Bundang-gu, Seongnam-si, Gyeonggi-do	031)725-7805
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