

2016 KOTEC ANNUAL REPORT

KOTEC  
**the Leader of 4th Industrial  
Revolution**



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Revolution



KOREA TECHNOLOGY  
FINANCE CORPORATION

2016 ANNUAL REPORT

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## CEO'S MESSAGE



“KOTEC is offering concentrated supports for startups in new growth engine sectors leading the 4th industrial revolution in order to help the nation create future income sources and quality job opportunities. This way, KOTEC will establish its position as the leader in technology startup platform.”

First of all, I would like to extend my appreciation to all our partners and SMEs who have continued to encourage and support us over the past year.

Today, the global economy is facing a new round of changes, and the wave of the 4th industrial revolution is rapidly surrounding us. *In The Art of War*, Sun Tzu proclaimed that a man who watches the changes in his surroundings and proactively responds thereto will be a god of war.

Opportunities always come with crises. Indeed, this 4th industrial revolution might pose as a crisis to those unprepared. However, as stated by Sun Tzu, if we are prepared and proactive in our response, this may serve as a great opportunity for success in our economy. You can be sure that KOTEC will do its utmost in the face of these changes to guarantee success.

As our society advances into this revolution, we are likely to see gradual and structural decreases in jobs due to developments in artificial intelligence (AI), the internet of things (IOT) and big data. KOTEC will continue to support promising technology startups in order to prevent this issue of growth without jobs. Indeed, we are already launching initiatives for new growth engines, including our “Industry 4.0 First Guarantee,” designed to foster the technology leaders of the 4th industrial revolution.

In addition, we will expand our support for startups from the current 65% to 80%, and will also increase our venture investment in them. We will continue to encourage the development of technology startups by implementing programs, such as the “Master Technology Startup Guarantee” for entrepreneurs with technology backgrounds in large conglomerates, to solidify our status as the leading technology startup platform.

Once again, I appreciate your endless support for KOTEC, and promise that we will continue our efforts to discover and support technology startups and to contribute to the development of the national economy.

May 2017  
Chairman & President **Kim Kyu-Ok**

김규옥

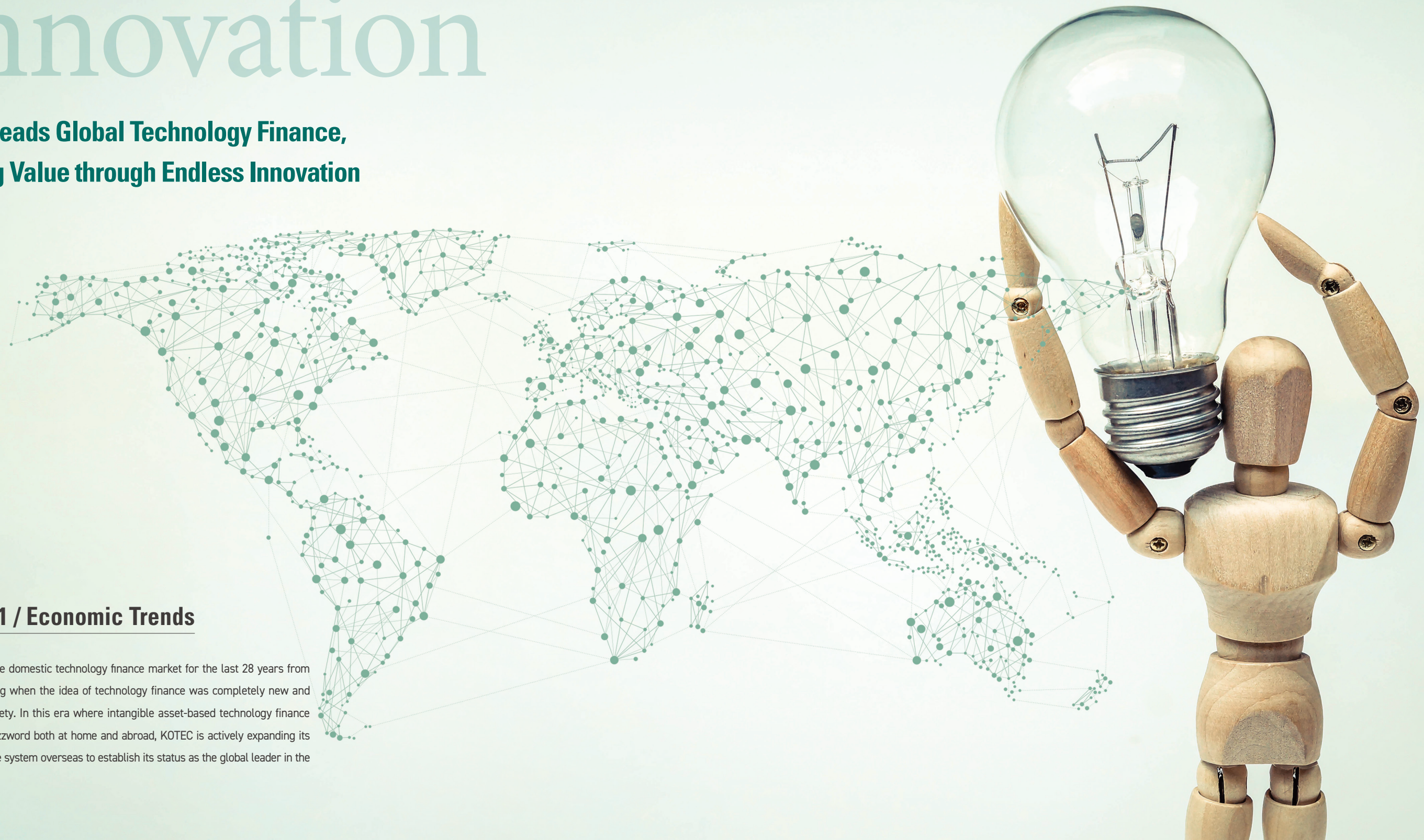


# Innovation

**KOTEC leads Global Technology Finance,  
Creating Value through Endless Innovation**

## **Chapter 1 / Economic Trends**

KOTEC has led the domestic technology finance market for the last 28 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.





# 01 Global Economy

## 01 Overview

The global economy is showing signs of steady recovery. The United States of America (USA) is expected to maintain its strong growth rate, and the Eurozone and Japan are slated to continue their gradual improvement. Of the emerging countries, China and ASEAN will remain on a stable growth path, while Brazil and Russia are rebounding from the slowdown. International trade is also growing, which in turn will expedite the export recovery of emerging economies.

### Global Economic Outlook

	Outlook Published in	2016 <sup>(e)</sup>	2017 <sup>(e)</sup>	2018 <sup>(e)</sup>
IMF	Jan. 2017	3.1	3.4	3.6
(Advanced Economies)	"	1.6	1.9	2.0
(Emerging Economies)	"	4.1	4.5	4.8
OECD	Mar. 2017	3.0	3.3	3.6
World Bank	Jan. 2017	3.0	3.5	3.7
Global Insight	Mar. 2017	3.0	3.4	3.7
Average of 6 IBs*	Mar. 2017	3.0	3.5	3.7

Unit: %, Source: Each institution, Bank of Korea (BOK)

IB: Investment Bank



## 02 Global Economic Outlook

### USA

The US economy will show deeper and broader recovery backed by its domestic consumption. The stable job market conditions and positive consumer sentiments will lead to increased private consumption, and rising oil prices and investment sentiments are expected to support capital investment. While the tax cuts and fiscal expansion by the Trump administration will pose as upside risks, uncertainties over new government policies and increasing protectionism in international trade will pose as downside risks.

### Eurozone

The Eurozone economy will maintain steady growth. Consumption is expected continue to increase on the back of the improving job market. Investments will also grow thanks to improving business environment. The proactive policy measures of the EU countries will contain the negative impacts of the Brexit vote. However, uncertainties over upcoming Brexit negotiations between the UK and the EU and critical elections in EU countries, including the general election in the Netherlands (March 2017), the presidential election in France (April and May 2017) and the general election in Germany (August to October 2017), should be closely watched.

### Japan

The Japanese economy is also expected to maintain steady growth based on public investment and private consumption. As the expansionary fiscal policy, among others, increases investment and as the job market continues to improve, private consumption is expected to grow. The Japanese government announced an economic policy package of JPY 28.1 trillion (including a fiscal expenditure of JPY 13.5 trillion) in August 2016 and the government budget for fiscal year 2017 is a record high of JPY 97.5 trillion, up 0.8% from the previous year. In addition, the economic recovery of its major trade partners, including the US, and the weak yen will further encourage the recovery of productions and exports. However, the recovery of private consumption will take time as wages have not matched other recovery trends. Furthermore, global trade protectionism and the aging Japanese population may strain economic growth.

### China

The Chinese economy will continue mid-6% annual growth riding on the robust growth of public consumption. The government set forth a “Development in Stability” initiative as part of its 2017 economic policy (at the China Central Economic Work Conference, December 16, 2016). To this end, the country will continue its expansionary fiscal policies while pursuing a “stable and neutral” stance in monetary policies. However, risks over the potential restructuring of overly-invested industries and excessive corporate debts should be carefully monitored.

# 01. Global Economy

## Growth Outlook for Major Economies

	2016	2017 <sup>(e)</sup>			2018 <sup>(e)</sup>
		1H	2H	Annual	Annual
Global Economic Growth Rate (%)	3.1	3.4	3.5	3.4	3.5
USA	1.6	2.3	2.1	2.2	2.3
Eurozone	1.7	1.7	1.7	1.7	1.6
Japan	1.0	1.3	1.2	1.2	1.0
China	6.7	6.6	6.5	6.5	6.2

Units: Year over year (yoy), Source: BOK

## Other Emerging Economies

India and ASEAN 5 (Indonesia, Malaysia, Philippines, Thailand, and Vietnam) are all expected to maintain healthy growth based on growing exports, private consumption and infrastructure investment. Meanwhile, Brazil and Russia will be able to rebound from negative growth buoyed by rising international raw material prices. Russia is showing good momentum, particularly in its improving industrial production, whereas Brazil still faces risks due to long-delayed economic reform. In addition, external risks exist. The increasing US interest rates, the slowing Chinese economy and the worsening international trade conditions might suppress ASEAN economic growth. Oil producers might also show a mild sign of recovery on the back of rising oil prices. However, oil prices are not expected to rise high enough to significantly increase the growth rates of oil-exporting countries.

## Growth Outlook for Emerging Economies

		India <sup>1)</sup>			Brazil			Russia			ASEAN 5 <sup>2)</sup>		
		16	17 <sup>e</sup>	18 <sup>e</sup>	16	17 <sup>e</sup>	18 <sup>e</sup>	16	17 <sup>e</sup>	18 <sup>e</sup>	16	17 <sup>e</sup>	18 <sup>e</sup>
IMF	Jan. 2017	7.2	7.7		0.2	1.5		1.1	1.2		4.9	5.2	
OECD	Mar. 2017	7.3	7.7		0.0	1.5		0.8	1.0		-	-	
World Bank	Jan. 2017	6.8	7.6	7.8	△3.6	0.5	1.8	△0.2	1.5	1.7	4.9	5.1	5.2
Global Insight	Mar. 2017	7.2	7.4		0.3	1.8		1.0	1.7		4.8	4.9	
Average of 5 IBs	Mar. 2017	7.4	7.8		0.4	2.5		1.7	2.0		5.1	5.2	

Note: 1) Based on the fiscal year 2) Indonesia, Thailand, Malaysia, Vietnam and the Philippines  
Unit: %, Source: BOK

## International Trade

International trade will show mild growth. Global import demands are also expected to increase backed by the recovery of emerging economies. However, it should be noted that trade protectionism, sluggish global investment and the restructuring of the Chinese economy may impede recovery.

## Global Commodity Market

Global oil prices are expected to maintain their current level (low-to-mid 50 dollars per barrel) based on expectations on production decreases. It should, however, be noted that there remain uncertainties, such as production decreases, geo-political instability in the Middle East and Africa, and increasing production of shale gas, with different institutions presenting different outlooks on supply and demand for this year.

Analysis of the previous 17 oil production decreases between 1982 and 2009 reveals that production has only decreased to 60% of OPEC's target, and over time, has actually increased to higher levels than previously.

## Oil Price Outlook by Major Institutions

	2017 <sup>(e)</sup>			2018 <sup>(e)</sup>
	1H	2H	Annual	Annual
CERA (Mar. 17, 2017)	57.8	57.8	57.8	57.3
OEF (Mar. 24, 2017)	53.5	50.5	52.0	52.0
EIA (Mar. 7, 2017)	54.2	55.0	54.6	57.5

Note: Brent oil price, ( ): outlook publication date, Unit: USD/barrel, Source: each institution, BOK





# 02 Domestic Economy

01  
Overview

In 2017, the domestic economy will continue its steady growth backed by improving exports and capital investments triggered by global economic growth. Breaking down contributions to growth by sector, exports will maintain the same rate as in the previous year, while domestic consumption will decrease. Estimates for future growth rates are muddled by mixed signals for both upside and downside risks. Upside risks include increasing external demand resulting from the recovery of the global economy and the IT industry, easing trade restrictions from China as a result of alleviated conflict over the THAAD, and the economic stimulus plans of the new government. Downside risks include the potential decline in international trade due to global trade protectionism, increasing trade restrictions by China as a result of mounting tension over THAAD and increasing volatility in the financial market due to heightened North Korean risks. GDP is expected to grow 2.6% throughout the year (1H: 2.6% → 2H: 2.7%), and by 2.9% in 2018 with the continuing recovery of the global economy.

Economic Outlook by Sector

	2016	2017 <sup>(e)</sup>			2018 <sup>(e)</sup>
		1H	2H <sup>(e)</sup>	Annual(e)	Annual
GDP	2.8	2.6	2.7	2.6	2.9
Private Consumption	2.5	1.9	2.0	2.0	2.3
Capital Investment	△2.3	9.5	3.3	6.3	3.4
IP Investment	2.3	2.5	2.9	2.7	3.2
Construction Investment	10.7	7.3	2.2	4.5	△0.1
Export	2.2	4.0	2.6	3.3	3.5
Import	3.6	6.2	1.8	4.0	3.4

Note: year on year (yoy), Unit: %, Source: BOK

Private Consumption

Private consumption will maintain steady growth backed by improving consumer sentiment. Consumer sentiment will recover as households change their view on the economy thanks to reduced political uncertainty. However, structural constraints, such as the weak improvement in household income and excessive household debts, will not fade. As new employment growth declines and inflation accelerates, improvement in the actual purchasing power of households will be limited. In 2017, private consumption will grow by 2.0%, lower than in the previous year (2.5%).

Private Consumption Outlook

2016	2017 <sup>(e)</sup>			2018 <sup>(e)</sup>
Annual	1H	2H	Annual	Annual
2.5	1.9	2.0	2.0	2.3

Note: year on year (yoy), Unit: %, Source: BOK

02  
Key  
Indicators

Capital Investment

In 2017, capital investment is expected to make a significant leap. The improving global economy, as proven by the rising OECD composit leading indicator (CLI), increases incentives for corporate investment. The significant reduction in political uncertainty as a result of the new administration's inauguration will have a further positive impact on the economy. In the IT sector, capital investment is expected to grow, primarily within the semiconductor and display fields. The semiconductor industry will expand in conjunction with flash manufacturing lines, which will further increase repair and maintenance investments as DRAM prices go up. The display industry will ramp up investments to increase OLED manufacturing lines. In non-IT sectors, some sectors (such as petrochemical) are predicted to make capital investments, but the general stance will remain conservative. Overall capital investment growth will reach 6.3%, up from -2.3% last year.

Capital Investment Outlook

2016	2017 <sup>(e)</sup>			2018 <sup>(e)</sup>
Annual	1H	2H	Annual	Annual
△2.3	9.5	3.3	6.3	3.4

Note: year on year (yoy), Unit: %, Source: BOK

Construction Investment

Construction investments have led economic growth over the last 3 years in line with the booming housing market (especially with respect to presales of apartments) and low interest rates. In 2017, construction investment will make robust growth centered on building construction, but growth volume will decline in the second half. Residential building constructions substantially increased in 2015 and 2016, and will continue throughout 2017, which will have a positive impact on residential building construction. However, possibilities to scale down presale of new apartments (approximately 400,000 houses) this year may inhibit growth. Among non-residential sectors, commercial buildings (such as officetels and hotels) will continue their declining growth trend. In 2017, construction investment growth is predicted to decline to 4.5%.

Construction Investment Outlook

2016	2017 <sup>(e)</sup>			2018 <sup>(e)</sup>
Annual	1H	2H	Annual	Annual
10.7	7.3	2.2	4.5	△0.1

Note: year on year (yoy), Unit: %, Source: BOK

IP Investment

IP investment is expected to deliver steady growth. Whereas growth of private sector investment may decline, overall investment will increase thanks to the increased R&D budget of the government (from KRW 19.1 trillion in 2016 to KRW 19.5 trillion in 2017). However, there are some constraints on the R&D investment, such as increasing M&As to secure new technology and worsening business environments at home and abroad. Backed by policy supports for software, new industries, notably artificial intelligence (AI) and the internet of things (IOT), are predicted to lead growth within the industry. In 2017, overall IP investment will grow by 2.7%.

01. Global Economy

IP Investment Outlook

2016	2017 <sup>(e)</sup>			2018 <sup>(e)</sup>
Annual	1H	2H	Annual	Annual
2.3	2.5	2.9	2.7	3.2

Unit: Year over year (yoy), Unit: %, Source: BOK

Export

Product exports (goods export among real GDP) will continue their upward trend. As advanced economies enjoy strong recovery and emerging countries (including resource exporters) show an increasing appetite for imports, global trade is expected to grow. However, increasing trade protectionism and the restructuring of the Chinese economy may pose a risk to trade growth. Meanwhile, the possibility of direct and indirect trade restrictions set by China, due to THAAD deployment, might suppress exports to China. Specifically, the semiconductor sector is expected to maintain steady growth backed by volume increase and price rebound, while the mobile phone sector (including both parts and final products) will continue to struggle as a result of escalating competition from new contenders within the market and as a result of increasing local supply of components. The petroleum products and steel sectors will make some growth as a result of rising prices. The machinery sector will also grow due to increasing demand from emerging economies for infrastructure investment, whereas the shipping industry will go into a deeper recession. In 2017, overall product export is expected grow by 3.3%.

Export Outlook

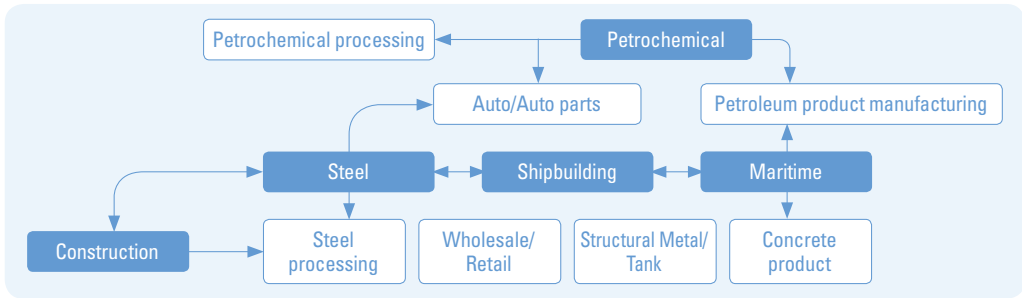
2016	2017 <sup>(e)</sup>			2018 <sup>(e)</sup>
Annual	1H	2H	Annual	Annual
2.2	4.0	2.6	3.3	3.5

Unit: Year over year (yoy), Unit: %, Source: BOK

Issues – 3 Major Concerns in 2017

The most critical problem is household debt. The aggregate amount of household debt is growing at a high rate and will soon reach an excessive level. In addition, market interest is expected to rise. The second critical issue is industry restructuring. Restructuring is already underway in five vulnerable sectors. Even if the process is completed smoothly, some aftershock is inevitable. If even a few large companies or conglomerates fail, the negative impact would be large enough to slowdown an entire local economy. The third critical issue is the growing trend of trade protectionism. This would be fatal to the Korean economy whose export dependence is as high as 50%.

Industries under Restructuring



Source: IBK Economic Research Institute

03  
Economic Outlook

\* Great Divergence

Referring to divergence of global monetary policy. While the US continues to hike its interest rates, Eurozone and Japan maintain low interest rate stance.

In 2017, the US economy is expected to make a 2% + growth. China will maintain some 6% growth as a result of its ongoing economic restructuring. The Eurozone will continue its steady growth thanks to improvements in its labor market. Japan is likely to maintain a sluggish growth despite government efforts on both the fiscal and the monetary fronts. However, concerns prevail as the global economy moves into uncharted territory, with the US tightening its monetary policy after record-high levels of monetary expansion, China executing strong restructuring, the Eurozone and Japan maintaining zero (or negative) interest rates, and the Great Divergence\* continuing its influence.

In 2017, the Korean economy will maintain steady growth, riding on improving export rates and capital investment as a result of the recovery in its major economies. This trend is expected to continue in 2018, with the economy predicted to grow 2.9% during this period. Looking at sectoral contributions to growth, domestic consumption will decrease while exports will increase. Future growth is muddled by both upward and downward risks. Upside risks include increased global economic recovery resulting from rising commodity prices and expansionary fiscal policies, corporate profit growth and investment expansion thanks to improving business conditions, and government stimulus policies. Downside risks include the potential decline in international trade due to global trade protectionism, increasing debt of households as a result of rising interest rates, and delayed recovery of economic sentiments due to political uncertainties.



# Challenge

**KOTEC is your partner in your journey to success**

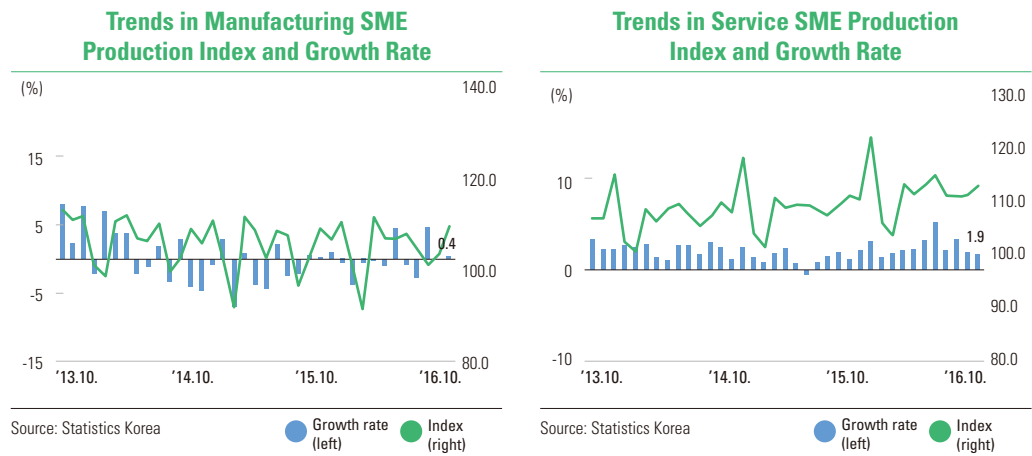
## Chapter 2 / SME and Venture Business Trends

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.

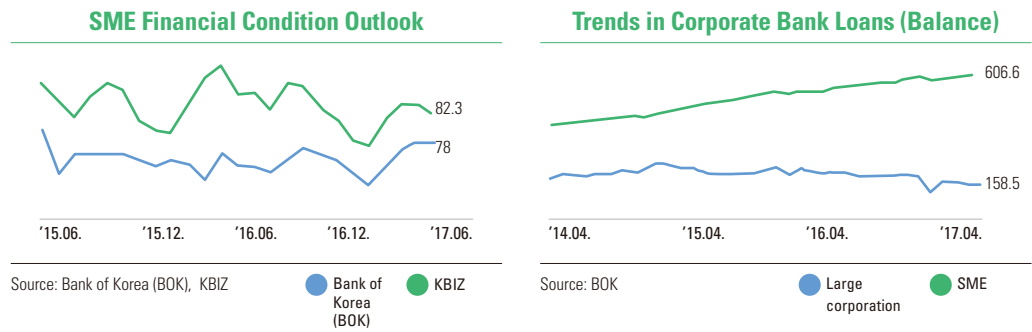
01

# Small and Medium Enterprises (SMEs)

In 2016, Small and Medium Enterprise (SME) production was stunted by the slow recovery of the domestic economy and the reduced growth in exports. Decreasing consumption and global trade volume negatively impacted the entire manufacturing cycle, from production to shipment to inventory. However, the global economic recovery in 2017 is expected to reinvigorate the production of semiconductors, machinery and electronic parts. As such, manufacturing SMEs are forecast to regain their momentum. The production of service SMEs is also growing. With the political and economic uncertainty clearing thanks to the inauguration of the new government and the recovery of the domestic economy, both manufacturing and consumption are expected to maintain their current growth rates.



The financial conditions of SMEs are gradually improving, compared to 2015 and 2016, buoyed by the recent economic recovery and by public expectations for the new government. Banks are also increasing the volume of SME loans. However, banks are likely to remain cautious about their lending to the maritime and shipbuilding industries whose credit risks are mounting in the wake of restructuring. In the meantime, the new administration is increasing support for startups and technology enterprises, which will encourage further financial support for tech-based startups.



02

# Venture Businesses

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 technology guarantees to be given, instead of the actual guarantee provisions. With this revision, the number of certified ventures continued to grow, reaching 33,360 at the end of 2016, 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, ventures continued to proliferate with the support from KOTEC which worked to provide guarantees centered on technological competence. Such efforts contributed to the growth in SME capability in technological innovation and promoted demand for certification which would allow the SMEs to apply for government support, including policy funding for companies applying for technology appraisal guarantees.

## Annual Growth of Venture Businesses

Category	2008	2009	2010	2011	2012	2013	2014	2015	2016
No. of Businesses	15,401	18,893	24,645	26,148	28,193	29,135	29,910	31,260	33,360

Source: Venture-In

From among the venture businesses, 70.2% belong to the manufacturing sector and 16.4% to S/W.

## Breakdown of Venture Businesses

Category	Manufacturing	IT Processin and S/W	R&D and Service	Others	Total
No. of Businesses (%)	23,426 (70.2%)	5,462 (16.4%)	369 (1.1%)	2,824 (8.5%)	33,360 (100%)

Source: Venture-In, as of 2016 year-end



02. Venture Businesses

In terms of regional distribution, 53.3% of venture businesses are based in the Seoul metropolitan area (Seoul, Gyeonggi, and Incheon), showing that companies with strong technological competence are still concentrated in the area.

Regional Distribution of Venture Businesses

Category	Gyeonggi	Seoul	Daegu/ Gyeong buk	Busan/ Ulsan	Daejeon/ Chung nam	Gyeong nam	Incheon	Gwangju/ Jeonnam	Others	Total
No. of Businesses (%)	10,243 (30.7%)	7,536 (22.6%)	3,228 (9.7%)	2,650 (7.9%)	2,401 (7.2%)	1,791 (5.4%)	1,510 (4.5%)	1,451 (4.3%)	2,550 (7.6%)	33,360 (100%)

Source: Venture-In, as of 2016 year-end

Venture businesses grew not only in quantity but also in quality. Despite the global pandemic resulting from the economic downturn, 474 venture businesses delivered over KRW 100 billion in sales in 2016 (based on the 2015 financial closing), up 3.0% (14 firms) from the previous year.

Growth of the KRW 100 Billion Venture Businesses

Year (Fiscal year)	2008 (2007)	2009 (2008)	2010 (2009)	2011 (2010)	2012 (2011)	2013 (2012)	2014 (2013)	2015 (2014)	2016 (2015)
No. of Businesses	152	202	242	315	381	416	454	460	474

Of the 474 venture businesses with over KRW 100 billion in sales as of 2016 (according to the Small and Medium Business Administration\*, KOTEC provided 408 venture businesses with KRW 2,542.7 billion in guarantees, with 333 entities (81.6%) already having graduated from the guarantee program and 75 (18.4%) maintaining KRW 165.3 billion in guarantee outstanding.

Guarantee Support for KRW 100 Billion Venture Businesses

Category	Graduated from Guarantee		Businesses under Guarantee		Total	
	No. of Businesses	Guarantee Provided	No. of Businesses	Guarantee Provided	No. of Businesses	Guarantee Provided
Guarantee (%)	333 (81.6%)	19,666 (77.3%)	75 (18.4%)	5,762 (22.7%)	408 (100%)	25,427 (100%)

Unit: No. of businesses, KRW 100 million

Of the KOTEC-guaranteed firms, 211 are publicly listed: 32 had already been listed at the time of initial guarantee provision, 139 went public during the guarantee period, and 40 went IPO after the guarantee was cleared. This is a clear picture of the impact of the KOTEC guarantees on the growth and maturity of venture businesses.

KOTEC will continue to do its utmost to provide technological financing to help identify and cultivate new ventures with the potential to add to the national economy's new growth engine and to ensure their sustainable growth.

03  
Inno-Biz

One of the most imminent challenges at hand is the task of fostering technology-oriented and innovative SMEs which are able to lead the national economy and help it to proactively cope with rapidly-changing technology 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 technology competitiveness and growth potential as Inno-Biz enterprises. This was done to provide these SMEs with comprehensive support on funding and marketing, with the hopes of transforming the SMEs into competitive global players.

With strong backing from the government and relevant institutions, 17,708 Korean SMEs have been certified as Inno-Biz enterprises through KOTEC's technology appraisal system as of the end of 2016.

Annual Trends in Inno-Biz. Certification

Category	2008	2009	2010	2011	2012	2013	2014	2015	2016
No. of Businesses	14,626	15,939	16,243	16,944	17,298	17,080	16,878	17,472	17,708

Source: SMBA

Breakdown of Business Categories

Category	Machinery	Electronics & Electricity	S/W	IT	Chemical	Others	Total
No. of Businesses (%)	4,737 (26.8%)	3,343 (18.9%)	1,291 (7.3%)	1,083 (6.1%)	1,230 (6.9%)	6,024 (34.0%)	17,708 (100%)

Source: SMBA, as of 2016 year-end

Regional Distribution

Category	Gyeonggi	Seoul	Daegu/ Gyeong buk	Busan/ Ulsan	Daejeon/ Chung nam	Gyeong nam	Incheon	Gwangju/ Jeonnam	Others	Total
No. of Businesses (%)	5,901 (33.3%)	3,158 (17.8%)	1,750 (9.9%)	1,224 (6.9%)	1,209 (6.8%)	1,282 (7.2%)	1,010 (5.7%)	795 (4.5%)	1,379 (7.8%)	17,708 (100%)

Source: SMBA, as of 2016 year-end

# Passion

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

## **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.





# 01 Overview

## 01 Roles and Responsibilities

Since its founding in 1989, KOTEC has played a pivotal role in providing about KRW 300 trillion in technology guarantees. These guarantees have been dedicated to technology-oriented SMEs identified as having significant business potential but lacking sufficient financial capacity. KOTEC has built a comprehensive financing platform for technology startups, ventures, and Inno-Biz enterprises in an effort to enhance the technology competitiveness of SMEs, and has extended its service coverage to technology and management consulting as well as equity investment in conjunction with technology appraisal.

KOTEC has primarily focused on companies that are technologically competent as deemed by KOTEC's future-oriented evaluation criteria defined in its technology appraisal system. This system has helped KOTEC to effectively support promising technology-based startups and boost their growth momentum and job creation abilities. In particular, KOTEC has increased financing for R&D and commercialization activities, launched the KOTEC Technology Matching System (KTMS) to link technology supply and demand, and participated in the Technology 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 technology competitiveness of SMEs in Korea.

Moving forward, KOTEC will continue to back technology-oriented SMEs to help them grow into competitive players in the global market by sharpening, deepening, and broadening its platform to support SMEs at 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.

## 02 Purpose of Establishment

1. To facilitate the financing of new technology-based businesses and further contribute to the development of the national economy by stabilizing and developing the technology guarantee system. <The Korea Technology Finance Corporation Act Article 1>
2. To provide debt guarantees to companies lacking the financial foundation to afford the collateral to facilitate financing. <The Korea Technology Finance Corporation Act Article 12>

## 03 Major Milestones

- 1989. 4.** The corporation was established (The fund was first set up in December, 1986)
- 1997. 3.** Opened the Technology Appraisal Center (the first of its kind in Korea)
- 1999. 2.** Implemented the technology appraisal system
- 2005. 7.** Developed the new KOTEC Technology Rating System (KTRS)
- 2006. 6.** Designated the authority to certify venture businesses
- 2007. 1.** Integrated guarantee process to be based on technology appraisal
- 2011. 5.** Relocated Headquarters to Munhyeon International Financial Complex in Busan
- 2012. 6.** Enactment guarantee-linked equity investment as a proprietary business
- 2015. 7.** Established the technology transfer and commercialization support system (Technology Convergence Center, KOTEC Technology Matching System operation)
- 2016. 9.** Changed the legal name (Korea Technology Credit Guarantee Fund → Korea Technology Finance Corporation)
- 2016.12.** Total of KRW 300 trillion in guarantees provided, KRW 21.2 trillion in guarantee outstanding and 71,000 firms in guarantee recipients

## 04 Vision and Strategy



# 02

## General Information

## 01

### Fundamental Property and Guarantee Utilization 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 primarily in the form of credit guarantees based on technology appraisals for new technology businesses that have little or no collateral to provide. KOTEC's fundamental property can be characterized as reserves for subrogation and primarily come from the government and financial companies.

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

- ① The fundamental property of the corporation shall consist of following
1. Contributions from financial companies, etc.
  2. Contributions from the government
  3. Contributions from persons other than those prescribed in subparagraph 1 and 2

The contributions from the government are transferred from the government's General Account to KOTEC to facilitate KOTEC's supply fund for technologically innovative SMEs with weak collateral capabilities. The contributions are provided to KOTEC every year directly from the government's fiscal budget (KRW 50 billion in 2014, 40 billion in 2015 and 80 billion in 2016) in the form of public goods assigned to protect and foster technology startups and SMEs.

The contributions received from financial companies can be characterized as part of a quasi-tax. KOTEC's technology guarantee system reduces the time and costs, particularly related to loan loss, which would otherwise be required to research technology information. The system also eliminates the risks that are associated with supplying such funds. As such, the financial companies provide contributions to pay for benefits and to support SMEs simultaneously. Financial companies contribute an amount calculated by  $1.35 \pm 0.02$  (differential rates) over 1,000 of the average monthly outstanding of their corporate loans, and the financial companies assisting new technology businesses contribute 3/1000 of the average quarterly outstanding. Financial companies under special agreements with KOTEC designed to intensify the benefit principle make special contributions.

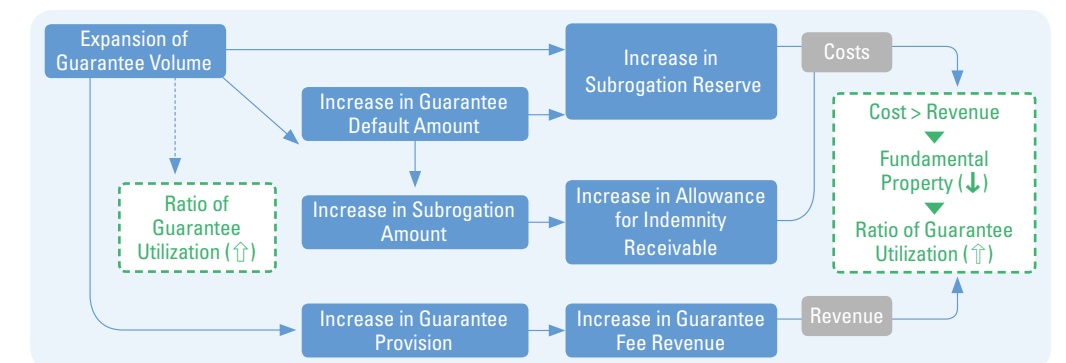
Fundamental property are used to meet guarantee demands and ensure continuous provision of guarantee supports. These funds do so by securing public credibility and supporting timely response to the needs of subrogation. It is stated that the fundamental property raised by contributions and profits made through fees and interest must first be spent to make subrogation payments and operate KOTEC, while the remaining funds are to be deposited into financial companies; used to purchase state, local government bonds, or other bonds guaranteed by the central government, local governments, or financial companies; 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 2016, KOTEC made significant effort to increase its income by actively engaging with external parties and by securing

an additional contribution of KRW 42.4 billion. Nevertheless, its fundamental property declined by KRW 92.8 billion from the previous year-end to KRW 2,202.3 billion. This was a result of the combination of the abolition of the joint guarantee system, decrease in interest revenue due to low interest rates, increase in subrogation cases from increasing defaults and high subrogation costs (e.g. bad debt expenses and reserves for subrogation) due to guarantee outstanding increases (of KRW 500 billion), all of which led to a decrease in collection of indemnity rights.

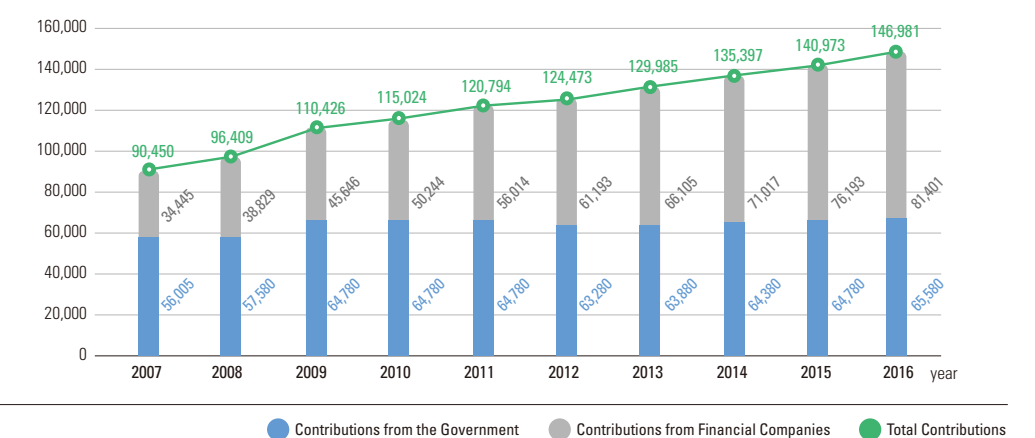
The ratio of guarantee utilization is calculated by dividing the technology guarantee volume by the fundamental property at a given point and is used as the main indicator for measuring the company's ability to cope with requests for subrogation and the guarantee supply capability to meet government policy requirements and the demand for guarantees. The ratio changes dynamically in accordance with the guarantee outstanding, default rate, subrogation, and fluctuations in contributions from the government and financial companies. The ratio of guarantee utilization plays a role in controlling the soundness of the guaranteed institution by setting guarantee limits, as well as in reflecting the multiplier effect, which is the greatest advantage of the guarantee system. Article 23 of the Enforcement Decree of the Korea Technology Finance Corporation Act limits the ratio of guarantee utilization to up to 20 times the sum of the fundamental property and retained earnings. KOTEC maintained a ratio of 9.6 times the sum in 2016.

#### Changes in Fundamental Property and Ratio of Guarantee Utilization following Increased Guarantee Volume



#### Accumulated Contributions over the Last Decade

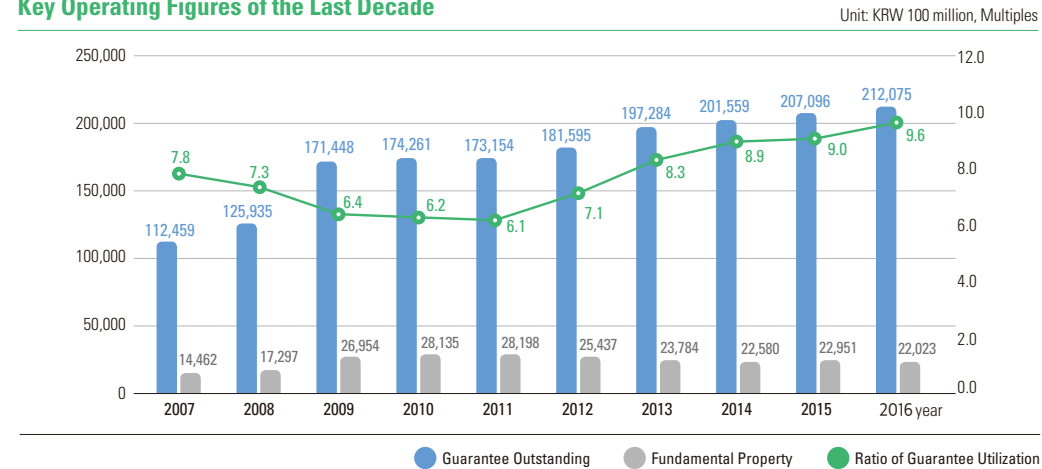
Unit: KRW 100 million



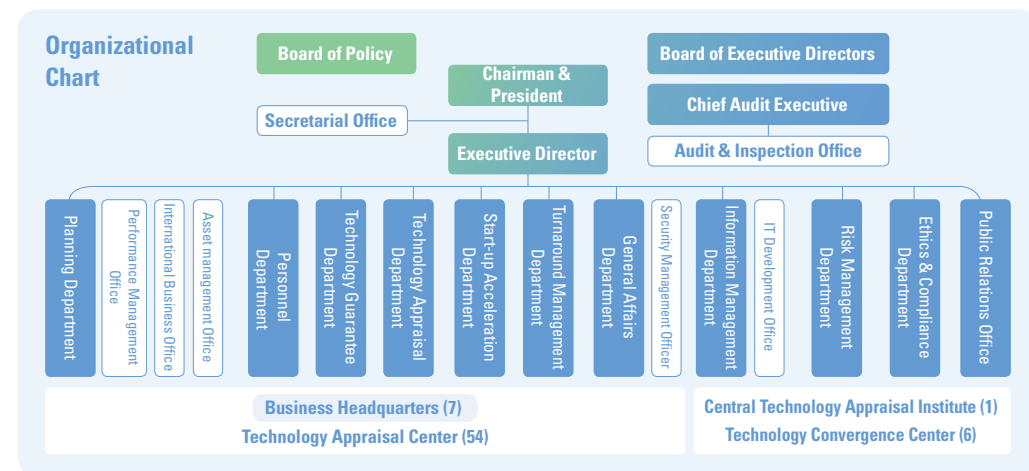


## 02. General Information

### Key Operating Figures of the Last Decade



Within the Head Office of KOTEC, some functional coordination was made by integrating the Technology Appraisal service and Technology Transfer service within one competent department in an attempt to maintain the highest level of support for core businesses. To reinforce on-site management of technology financing, KOTEC splited its Chungcheong Honam Business Headquarters into the Chungcheong and Honam Business Headquarters, while establishing the Gyeonggi and Gwangju Technology Convergence Center.



As of the end of 2016, KOTEC consists of a head office (10 departments and 2 offices) and its branch network (1 Central Technology Appraisal Institute, 6 Technology Convergence Centers, 7 Business Headquarters, and 54 Technology Appraisal Centers) and its staff which is comprised of 1,156 people, including 7 executives and 104 special service officer members under separate contracts.

### Personnel Composition

Unit: persons

Category	Execu-tives	1st Grade	2nd Grade	3rd Grade	4th Grade	5th Grade and below	Special Service Officers	Total
Headcount	7	21	83	230	446	265	104	1,156

### 03 Major Operations, etc.

The major services are comprised of KOTEC's core services, i.e. technology guarantees, technology appraisals, guarantee-linked equity investments, and right to indemnity 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	Technology Guarantee	<b>Guarantees for loans borrowed by technology-based SMEs, including new technology businesses, from financial institutions to start their businesses and develop and/or commercialize their technology</b> <small>* Provision of new guarantee under the General Guarantee Scheme was suspended whose target are the companies that do not fall under the category of new technology businesses (as of Aug. 2004)</small>
		<b>Technology Startup Guarantee</b> Guarantees for technology startups less than five years old
		<b>Technology Innovation Guarantee</b> Guarantees for SMEs with excellent technologies such as venture and Inno-biz enterprises, green and knowledge-based service industries, 10 next-generation growth engine industries, and promising industries for future growth (6T)
		<b>Technology Appraisal Guarantee</b> Guarantees for companies with excellent technologies based on the technology appraisal of intangible technologies and knowledge that the company retains
	Technology Appraisal	<b>Appraises future values of the technology that a company retains, such as technological competency, marketability and business values, and uses the appraisal results for various purposes in technology financing support</b>
		<b>Technology Valuation</b> Appraisal of values that are being realized or can be realized in the future by the corresponding technology
		<b>Technology Business Feasibility Test</b> Appraisal of technological competence and feasibility of the corresponding business when a company is commercializing a specific technology or idea or expanding investment into current technology business
		<b>Comprehensive Technology Appraisal</b> Comprehensive appraisal of all technologies that the company retains in connection with the company's mission; technologies include the management environment and business prospects
	Guaratee linked Inv.	<b>Provides direct equity investment in conjunction with a credit guarantee program for early-stage technology firms with distinguished business competency</b> - Purchase of Common Stocks, Preferred Stocks, CB, BW
	Indemnity Mgt.	<b>Exercises legal or contractual right to indemnity against credit guarantee debtor when default is incurred until the indemnity right is duly expired.</b> - Pursuing legal procedures (auctions and lawsuits) and encouraging induced redemptions - Expanding the support into helping credit recovery and re-start for honorable failure business owners
Supplementary Services	Management Consulting and Technology Advisory	<b>Management and technology consulting to improve efficiency and competitiveness</b> - Business and technology diagnosis and consulting, startup education and training, sales channel development, mentoring, restructuring and M&A, etc.
	Technology Innovation Support	<b>Certification of Ventures &amp; Inno-Biz</b> <b>Certification of Green Technology &amp; Green Enterprise</b>

## 02. General Information

KOTEC provides guarantees preferentially for innovative technology enterprises with technology leadership and 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

- **Technology-intensive SMEs seeking business opportunities with new and advanced technologies and ideas**

#### • Types of Venture Businesses

- Technology appraisal guarantee recipient enterprises or technology appraisal loan recipient enterprises
- R&D enterprises
- Enterprises receiving investment from venture capitals



### Inno-Biz Enterprise

- **Inno-Biz is a term derived from “Innovation” and “Business,” and refers to a company that retains competitive strengths based on their technological edge**

#### • Conditions for qualification as an Inno-biz enterprise

- Enterprises that have been in operation for no less than three years, have obtained at least 700 points in the technology innovation system evaluation, and have achieved a grade of B or higher in their business evaluation

## 03

## Performance of Major Operations



### 01 Overview

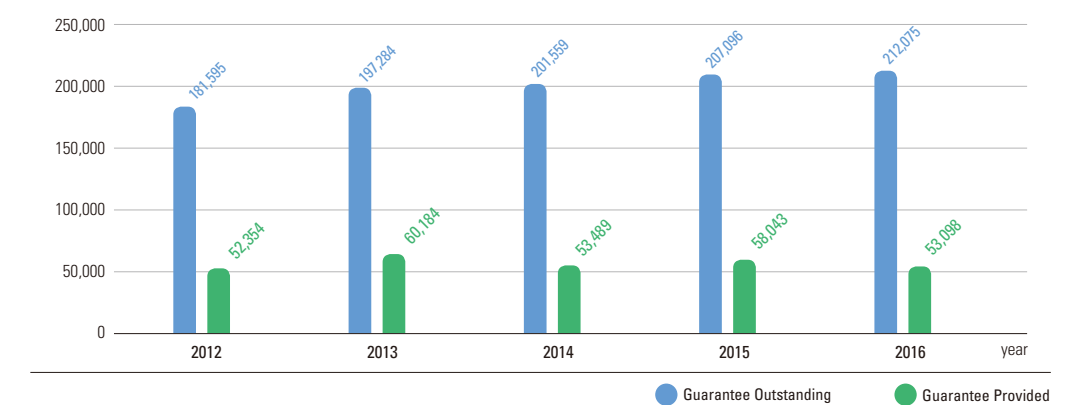
The global economy in 2016 struggled under prolonged uncertainties resulting from the slowing economies of emerging countries and the Fed's normalizing interest rate. The domestic economy also slowed as a result of weakening exports and demands. Under this difficult situation, KOTEC worked to fulfill its responsibilities as a specialized technology financing vehicle to create jobs and new growth engine, with the goal of invigorating the slowing economy. In particular, KOTEC expanded its work despite limitations in guarantee resources. It focused on improving the technology competitiveness of technology-startups and SMEs and provided intensive support for the expansion of future growth engines. KOTEC also created technology appraisal demands, including the TCB, by advancing its technology appraisal infrastructure and expertise, and drove the globalization of its technology appraisal business by participating in the government-led “Knowledge Sharing Program (KSP)”. In addition, it tightened its risk management practices and systematically exercised its indemnity rights to solidify its business fundamentals.

### A. Technology Guarantee

KOTEC pushed forward with structural improvements for marginal businesses and enterprises 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 guarantee outstanding amounted to KRW 21.2 trillion in 2016, a KRW 500 billion increase from the previous year.

Size of Technology Guarantees

Unit: KRW 100 million



Category	2012	2013	2014	2015	2016
Guarantee outstanding	181,595	197,284	201,559	207,096	212,075
Guarantee provided	52,354	60,184	53,489	58,043	53,098

Unit: KRW 100 million

03. Performance of Major Operations

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.

Guarantee Supply for Three Major Support Areas

Category	2014	2015	2016	
			Plan	Actual
Technology Startups	91,928	103,333	88,000	104,666
New Growth Engine Industries	61,046	70,812	57,000	66,580
R&D Financing	29,515	34,257	38,000	41,937

Unit: KRW 100 million

Technology Startups

Businesses based on new technologies within a five-year span since foundation

New Growth Engine Industries

Companies manufacturing or having the relevant technology for 17 leading items in 3 areas as designated by the government

R&D Financing

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

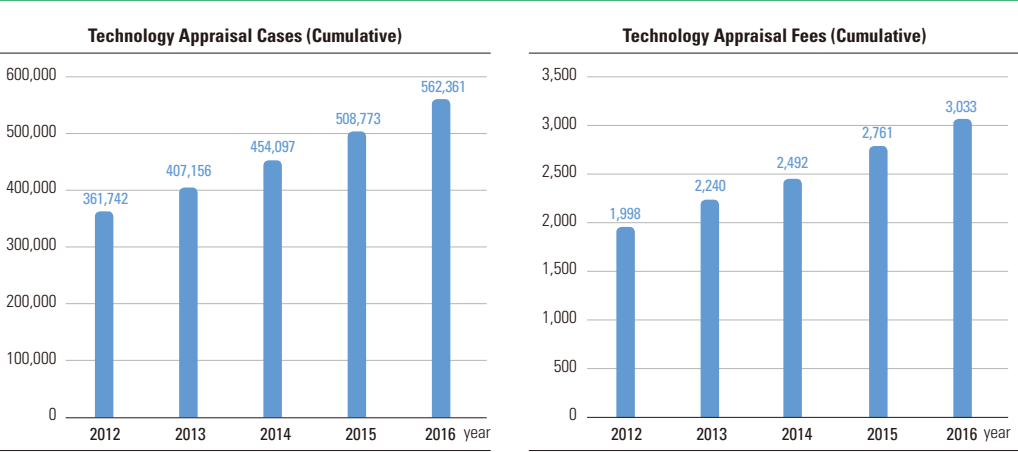
B. Technology Appraisal

Technology appraisal process involves the comprehensive review of the prospects of technology, marketability, and business feasibility with regard to intangible technologies. The results of the review are expressed in amounts, grades, points, and opinions. Since the first technology appraisal, conducted in March 1997, the number of appraisal cases by KOTEC have steadily increased every year to a total of 562,361 in 2016, with the accumulated appraisal fees amounting to KRW 303.3 billion. KOTEC Technology Rating System (KTRS) has served as a tool to assess the potential value, technology and growth potential, feasibility of commercialization, and intangible asset values of 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

<p>Future Value Oriented Funding Support</p> <ul style="list-style-type: none"><li>Technology Appraisal Guarantee</li><li>TCB-Based Credit Loan</li><li>Guarantee-linked Investment</li></ul>	<p>Appraisal of Technology and Growth Potential</p> <ul style="list-style-type: none"><li>Venture Business Certification</li><li>Inno-Biz Certification</li><li>Green Technology Certification</li></ul>	<p>Appraisal of Commercialization Feasibility of Developed Technology</p> <ul style="list-style-type: none"><li>R&amp;D Support Appraisal</li><li>R&amp;D Economic Feasibility Appraisal</li></ul>	<p>Valuation of Intangible Technology (e.g. Patents)</p> <ul style="list-style-type: none"><li>Technology Transfers and M&amp;A</li><li>Investment in Kind</li><li>Establishing Collateral security on Patent Rights</li></ul>
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Technology Appraisal Status



Category	2012	2013	2014	2015	2016
Technology Appraisal Cases	45,702	45,414	46,941	54,676	53,588
Cumulative	361,742	407,156	454,097	508,773	562,361
Technology Appraisal Fees	283	242	252	269	272
Cumulative	1,998	2,240	2,492	2,761	3,033

C. Default and Indemnity Rights Management

KOTEC manages the rate of insolvency-driven default via ongoing monitoring, restructuring and failure prevention programs. As a result of this work, the rate has been on the decline, closing at 4.4% in 2016.

Incremental Default Amount & Default Rate

Category	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Incremental default amount	6,050	7,679	7,420	8,184	8,715	9,026	7,551	8,802	8,457	9,325
Default rate	5.4	6.1	4.3	4.7	5.0	5.0	4.0	4.4	4.1	4.4

Unit: KRW 100 million, %

Accommodating a government policy for startups, KOTEC strengthened its default prevention and rehabilitation programs. As the environment for indemnity recovery is decaying as a result of increasing liability exemptions, such as petitions for bankruptcy and reductions in joint surety systems, KOTEC has pursued improvements in indemnity recovery by intensifying its efforts to discover new resources for indemnity recovery, executing collectability strategies differentiated by debtors, using information held by public institutions, and tapping into available legal procedures. It also sold long-delinquent receivables to the Korea Asset Management Corporation in order to improve the efficiency of receivable management.



### 03. Performance of Major Operations

Indemnity Rights Recovery by Year



#### A. Technology Guarantee Support

##### Total technology guarantee support

KOTEC provided stable support for technology financing to SMEs to fulfill its role as a public guarantee institution specializing in technology enterprises. KOTEC also worked to help technology-innovative SMEs effectively secure strong economic competitiveness to prepare for current economic uncertainties and to thrive in the future.

With a focus on new growth engine industries and technology startups, KOTEC provided KRW 21.6183 trillion in total guarantees in 2016 to satisfy the financial needs of SMEs. Its guarantee outstanding amounted to KRW 21.2075 trillion, up 497.9 billion from the previous year.

In order to boost the economy and create jobs, KOTEC concentrated its support on SMEs with strong job creation capabilities, innovative technology enterprises capable of creating new growth engines, and export-oriented SMEs. KOTEC's support for these businesses accounted for 95.4% of its total guarantee outstanding. KOTEC also issued P-CBOs worth KRW 256.2 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 businesses

KOTEC has concentrated its guarantee support capabilities on technology startups and venture businesses, both expected to drive the future growth engine of the national economy and to have a significant impact on job creation, based on the principle of selective focus. In particular, its guarantee funding for startups is continuously increasing.

Annual Guarantee Support

Category	2014	(%)	2015	(%)	2016	(%)
Total Guarantee Provision	200,781	100	209,804	100	216,183	100
Tech Innovative SMEs	186,756	93.0	200,447	95.5	206,297	95.4
Venture Businesses	111,718	55.6	119,368	56.9	128,306	59.4
Inno-Biz	70,867	35.3	67,359	32.1	69,635	32.2
Startups	91,928	45.8	103,333	49.3	104,666	48.4
Technology Appraisal Guarantee	188,832	94.0	202,802	96.7	208,794	96.6
Knowledge & Culture Industry	31,519	15.7	34,190	16.3	36,304	16.8
Job-Creating SMEs	41,827	20.8	49,876	23.8	49,886	23.1
New Growth Engine	61,046	30.4	70,812	33.8	66,580	30.8
P-CBO Guarantee	4,749	2.4	1,169	0.6	2,562	1.2
Total Guarantee Outstanding	201,559	-	207,096	-	212,075	-

Unit: KRW 100 million, %

##### Guarantees for technology-innovative enterprises

To actively support government policy, guarantees for technology-innovative firms increased to KRW 20.6297 trillion in 2016, up KRW 585 billion from 2015 (20.447 trillion). Its share of total guarantees provided also increased to as high as 95.4%.

##### Guarantees for startups

KOTEC have provided guarantees for startups, no more than five years old, in order to enhance the vitality of the national economy and to create more jobs. KOTEC gradually expanded the share provided from KRW 9.1928 trillion in 2014 and 10.3333 trillion in 2015 to 10.4666 in 2016.

##### Technology appraisal guarantee

As a key player in technology financing, KOTEC established a robust technology appraisal system optimized for financing innovative technology enterprises, and increasingly utilized this system in providing KRW 20.8794(96.6%) in technology appraisal guarantees, up KRW 599.2 billion from the previous year's provision of KRW 20.2802 trillion (96.7%).

### 03. Performance of Major Operations

Focus on key areas to create future growth engines

KOTEC is leading efforts to provide technology financing based on technology competency and growth potential to successfully back up government initiatives and efficiently distribute limited resources. In particular, KOTEC focuses on 4 pillars of high-growth potential sectors (excellent technology enterprise, green growth enterprise, export SMEs and venture startups) and high-risk new-growth areas that require policy support (i.e. new growth engines). KOTEC have expanded guarantee support for technology-based SMEs in these aforementioned categories.

Guarantee provided for 4 pillars of growth

Pillar	Excellent Technology Enterprise	Green Growth Enterprise	Export SMEs	Venture Startup
2015	7.7	3.5	3.0	5.5
2016	8.4	3.4	3.1	5.8

Unit: KRW trillion

#### B. Creating Jobs and Encouraging Entrepreneurship via Technology Finance

Increasing job creation guarantees and support for job-creating companies

KOTEC identified the companies with strong potential for job creation as Job-creating Companies, providing them with KRW 4.9886 trillion in guarantees in 2016 along with preferential fees and a simplified assessment process. KOTEC also tightened the rollover conditions set for the Job-creating Companies in order to focus benefits on companies with actual job creation records. It provided KRW 318.6 billion in guarantees as working capital intended to create new jobs through the Preferential Guarantee for Job Creation in 2016.

Expanding startup guarantee support to encourage entrepreneurship

As it becomes increasingly important to explore and nurture technology-oriented startups to build the foundation for future growth and to tackle growth without employment, KOTEC has been expanding guarantee support for technology-oriented startups in their first five years since their foundation. The Customized Startup Growth Program was created to provide focused support to startups falling in one of four designated categories, including knowledge and culture startup, science and engineering challenger startup, technology career-based core industry startup, and high-tech and growth-associated startups. Under this program, a total of KRW 1.9703 trillion was provided to 7,535 startups. KOTEC expanded its guarantee supports to early-stage startups, younger generation startups, and those with no sales records in its effort to commit more of its guarantee resources to micro-scale startups. Under these various programs, KRW 2.6854 trillion (50.6% of the total new guarantees of KRW 5.3098 trillion) was provided to 9,733 startups.

Establishing a startup safety network to encourage startup growth

To promote business startups and maintain economic resilience, the joint guarantee system was reformed. For sole proprietors, only the actual owner/co-owner on the business registration is held responsible for a joint guarantee. For corporations, the

principle was formed to hold only the representative (i.e. CEO or largest shareholder, etc.) liable. With this system in place, the average number of joint guarantee holders of new guarantees has continuously declined (by 0.06 for individual businesses and by 0.76 for institutions in 2016). In addition, KOTEC expanded a special measure for liability exemption to include non-startups with excellent technology (with a technology rating of AAA to A) to proactively address the adverse effects of the joint guarantee system. In order to establish a financial environment under which the commercialization of creative ideas and technologies is encouraged and to build a startup culture by decreasing fear of failure, KOTEC introduced the New Startup Guarantee Program that significantly expanded the scope of the joint security exemption for startups less than 5 years old. Consequently, the total amount of new exemptions (from joint security) went up KRW 332.2 billion to KRW 811.0 billion in 2016, an increase of 69.4%. The number of beneficiary enterprises was 2,756, up 2,235 (428%) from the year before. In addition, KOTEC signed collaboration agreements with 17 commercial banks to spread such exemptions throughout the financial sector. In addition, KOTEC reevaluated discriminative components against former obligers whose legal liabilities expired or completed, and changed the terms and conditions for providing guarantee for companies that paid off their subrogate debts in order to ease burdens of failure and encourage commercialization of creative ideas.

No. of Average Joint Guarantee Holders for Guarantee Provided

Category	2012	2013	2014	2015	2016
Individual Business	0.17	0.09	0.06	0.05	0.06
Corporation	1.14	1.07	1.03	1.02	0.76

Unit: persons

#### Implementing a platform to support commercialization of excellent technologies developed by universities

In order to systematically support the entire commercialization process for excellent technologies developed by local universities, and thereby create new growth engines and encourage entrepreneurship among high-caliber talents, KOTEC built the U-Tech Valley, an open innovation platform, and signed U-Tech Valley agreements with 5 top-tier universities, including Seoul National University, Yonsei University, Korea University, KAIST, and POSTECH, in December 2016. This initiative was the first of its kind among financial institutions in Korea. This program is designed to incubate excellent startups established (or to be established) by high-caliber technology talents in universities with excellent research records. It is a comprehensive financial and non-financial support system for each growth stage, from pre-startup to startup to launch. Under this program, KOTEC will continue to increase benefits, such as granting a pre-approved guarantee limit of up to KRW 3 billion, exempting joint surety requirements for startups, establishing preferred recommendations for guarantee-linked investment and marketing/sales support for take-off enterprises, and supporting IPO and technology transfer for exit companies.

#### C. Growing a High-growth, High Value-added Knowledge and Culture Industry as the Main Engine for the Economy

Consolidating the growth base for the knowledge and culture industry

The Korean government seeks to increase support for service and cultural content industries which have high potentials

### 03. Performance of Major Operations

for job creation and added value in order to promote new growth engines and address the issue of high unemployment rates. To meet these social needs, KOTEC has identified ‘the knowledge and cultural industry’ as a major target industry as it has high potential impact on improving the economy and supporting government policies. To this end, KOTEC has developed a long-term road map in which KOTEC will expand its new guarantee provisions to the industry to KRW 4.2 trillion (23% of its total guarantee provision) by 2020.

In 2016, the ratio of the guarantee provision for the industry to total guarantee outstanding increased to 16.8% (1.8% higher than the initially planned 15%), as KOTEC expanded its technology finance support to further accommodate the knowledge and culture sector.

#### Increasing support for the knowledge and culture industry

KOTEC continued to run its ‘Guarantee for High Value-Added Service Projects’ (a program first introduced in August 2013) to increase support for the knowledge and culture industry. This program is differentiated from those for manufacturing and other industries in that it evaluates projects individually rather than the candidate company itself as a whole. The program was designed to help close the gap between the businesses’ funding demands and actual payments, which has long been a chronic problem for the SMEs engaging in the knowledge and culture industry in carrying out service contracts. The program also aims to provide an environment which fosters high-quality project implementation. KOTEC also amended the assessment process to be more content focused, expanded the benefits of exemptions from special clauses for prior payment, and simplified the guarantee renewal process to improve work efficiency and customer satisfaction. Overall, KOTEC provided a total of KRW 229.3 billion in guarantee under the program in 2016.

#### Expanding funding for cultural content production through the introduction of the Cultural Content Completion Guarantee

In September 2009, KOTEC implemented a Cultural Content Completion Guarantee Program for the cultural content development of nine fields, including games, dramas, animations, and movies, to facilitate cultural content development and to encourage investment. Under this program, KOTEC established its current evaluation system which focuses on the contents of candidate projects rather than on the financial or credit record of the company. In addition, KOTEC eased the support requirements for low-budget projects (of KRW 0.1 billion or below), and eased the requirement of the additional payment of success fee. As a result, the program extended KRW 74.6 billion in 2016 to prominent cultural content projects, including the film *Operation Chromite*, the TV dramas *Saimdaing*, *Light's Diary* and *Hwarang: The Poet Warrior Youth*, and the musical *Hedwig and the Angry Inch*.

### D. Developing Customer-Oriented Technology Financing Infrastructures

#### Simplifying work processes to increase customer satisfaction

KOTEC simplified and expedited the work process and development of excellent IT systems to improve customer satisfaction. It streamlined the guarantee rollover process; significantly eased the overall renewal and evaluation process for existing customers with good credit ratings; simplified the procedures for changing loan banks or converting individual businesses into corporation; eliminated inefficient steps in the guarantee renewal process; and integrated a post-guarantee provision management process.

KOTEC actively promoted the “Non-visit Rollover System” that allows customers to extend their guarantees without

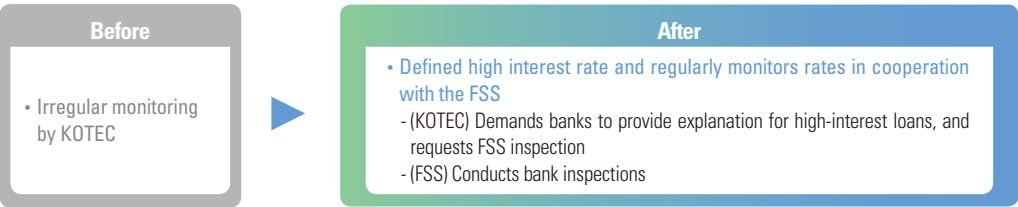
the need to physically visit KOTEC. 61.5% of customers were found to have made use of the system. It significantly reduced the amount of time and effort spent by customers on document preparation and travel, improving both customer satisfaction and the work efficiency of KOTEC.

#### Monitoring guaranteed loan interest rates and mitigating guarantee fee charges

To establish the institutional framework to lower SME loan rates, KOTEC renewed the terms and conditions for guaranteed loans, prohibiting banks from arbitrarily imposing additional rates. KOTEC also built an interest rate notification system that allows users to check the guaranteed loan rates over the last three months and compare their interest rate with those of others.

Furthermore, KOTEC set thresholds for high interest rates and reinforced a monitoring system to discourage financial institutions from imposing excessive interest rate on guaranteed loans. For high-interest guarantee loans, KOTEC made it mandatory for lending banks to provide prima facie evidence for the reasoning behind high rates and to submit such evidence to the Financial Supervisory Service (FSS) for review.

#### Improving regular monitoring for guaranteed loan interest rate



### A. Technology Appraisal Overview

#### Concept

Technology appraisal is the involves the in-depth evaluation of the technology competence, business feasibility, marketability, and so forth of an intangible technology, with a focus on potential value. The evaluation results are then expressed in amounts, grades, points, and opinions.

#### Scope of Technology Appraisal

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

#### Types of technology appraisal

Technology appraisals are categorized into technology monetary valuation, business feasibility assessment, and comprehensive technology assessment, in accordance with the purpose and objectives of each appraisal.



### 03. Performance of Major Operations

#### 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 Business Feasibility Appraisal	Evaluates the value and feasibility of a certain technology-based business and expresses it in a rating, in the case of an enterprise hoping to commercialize a specific technology or idea, or to expand the investment to currently promoting technology businesses
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

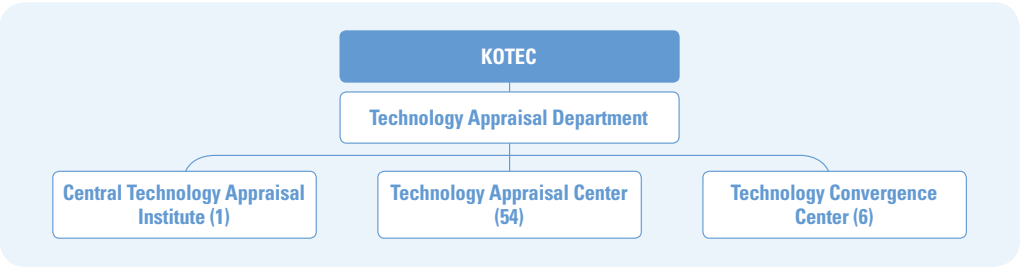
Since first introducing the Technology Appraisal Center and launching its technology appraisal system in Korea in March 1997, KOTEC has served as the leading appraisal institution which provides technology appraisal-based guarantees, develops new technology appraisal systems (KTRS), and serves as the institution to issue venture business certificates and green certificates.

<b>Mar. 1997</b>	Opened technology appraisal center
<b>May. 1997</b>	Designated as an agency for the appraisal of the technologyand business feasibility of patent (Invention Promotion Act)
<b>Oct. 1997</b>	Designated as an appraisal agency for evaluating the industrial properties of venture businesses as investment in-kind (Act on the Special Measures for the Promotion of Venture Businesses)
<b>Aug. 1998</b>	Designated as an appraisal agency for identifying venture businesses (Act on the Special Measures for the Promotion of Venture Businesses)
<b>Nov. 1998</b>	Designated as a technology appraisal agency for the industrial properties of foreigners as investment in-kind (Foreign Investment Promotion Act)
<b>Feb. 1999</b>	Implementation of technology appraisal guarantee system
<b>Apr. 2001</b>	Designated as a professional agency specializing in technology appraisal, transfer of technologies and commercialization (Technology Transfer and Commercialization Promotion Act)
<b>Jul. 2001</b>	Designated as a technology appraisal agency for the reference of venture businesses’ listed on the KOSDAQ (Korea Securities Dealers Association)
<b>Aug. 2001</b>	Designated as a technology appraisal agency for the selection of INNO-BIZ enterprises (technology-innovative SME) (Small and Medium Business Administration)
<b>Sep. 2004</b>	Launched a technology appraisal certification system (for internaluse)
<b>Jul. 2005</b>	Implemented the new KIBO (KOTEC) Technology Rating System (KTRS)
<b>Apr. 2007</b>	KTRS acquired domestic BM patent
<b>Apr. 2008</b>	Applied a patent registration for the international patent (PCT) for the technology appraisal system (KTRS) in other countries (Japan, China, and Singapore)
<b>Oct. 2009</b>	Acquired a Korean patent for a technology appraisal model (KTRS-Startup) for use by venture businesses
<b>Apr. 2010</b>	Designated as the appraisal agency for green certification by the government

<b>Oct. 2010</b>	KTRS feedback system acquired domestic patent (2 cases)
<b>Jan. 2011</b>	Applied and implemented the research results for the advancement of KTRS (KTRS-V2.0)
<b>Nov. 2012</b>	Developed a Green Technology Rating Model (GTRS) for improved assessment of Green Technology and related industries
<b>Dec. 2013</b>	Improved the KTRS models and redefined system processes (by applying the results of commissioned research)
<b>Jun. 2014</b>	Designated as a Tech Credit Bureau (TCB) institute
<b>Jul. 2014</b>	Developed the Pre-Startup Appraisal Model
<b>Jul. 2015</b>	Applied for BM patents (2 cases) on technology appraisal methods and know-how
<b>Dec. 2015</b>	Developed the Investment-oriented Technology Appraisal Model
<b>Jan. 2016</b>	Implemented “Technology Credit Appraiser” certificate system for the public
<b>Aug. 2016</b>	Joined the Climate Technology Center and Network (CTCN)

#### Technology appraisal organization and manpower

To meet growing the demands for appraisal and to secure a sustainable financial sales network, KOTEC consolidated its technology appraisal business into one central technology appraisal institute, with six technology convergence centers and 54 technology appraisal centers as of the end of 2016.



Organization	Roles	Key Responsibilities
Central Technology Appraisal Institute	Key appraisal institution to perform highly sophisticated appraisals	<ul style="list-style-type: none"><li>Highly sophisticated technology appraisal (technology appraisal for investment in-kind, etc.)</li><li>Technology appraisal marketing in the government and relevant institutions</li><li>Verification of technology appraisal reports and support for technology appraisal, etc.</li></ul>
Technology Convergence Center	Specialized organization to support technology transfer and commercialization	<ul style="list-style-type: none"><li>Specialized technology appraisal regarding technology deals and M&amp;A (including accompanied guarantees)</li><li>Identification of technology deal demands, intermediaries, and marketing functions</li><li>Technology information collection and processing, networking with relevant institutions</li></ul>
Technolog Appraisal Center	Conduct standardized technology appraisal work	<ul style="list-style-type: none"><li>Technology appraisal guarantee (IP guarantee, R&amp;D guarantee, etc.)</li><li>Technology business feasibility test (e.g., feasibility test on government R&amp;D projects)</li><li>Technology-credit appraisal, venture/inno-biz confirmation, etc.</li></ul>

### 03. Performance of Major Operations

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

Classification	2011	2012	2013	2014	2015	2016
Total staff	1,068	1,066	1,085	1,102	1,126	1,156
Dedicated Technology appraisal experts	559	532	578	552	592	581
Ph.D Degree holders (or equivalent)	131	134	147	154	168	190

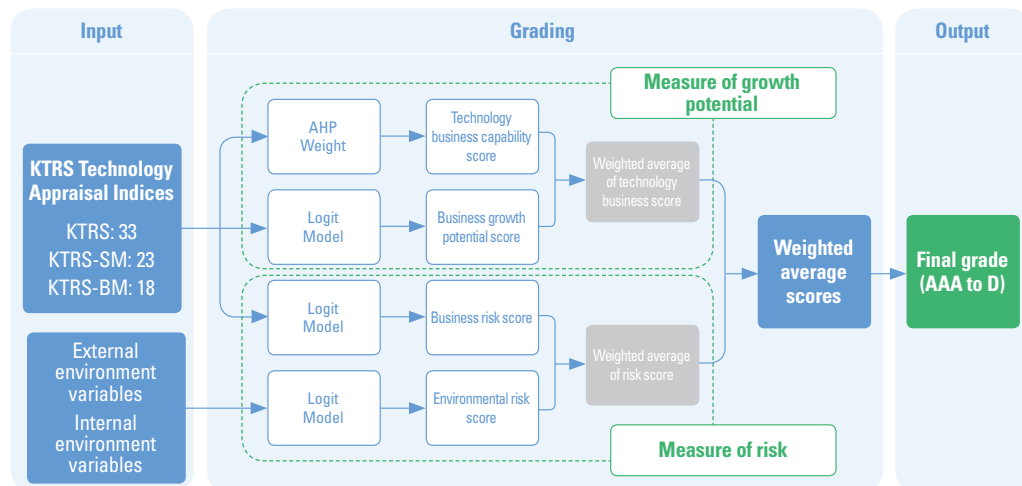
※ Dedicated technology appraisal experts: Ph.D Degree holders (or equivalent), those designated as professionals, members of the Technology Appraisal Department/Central Technology Appraisal Institute/Technology Appraisal Team, or those certified for Technology Appraisal Level 3 or above

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

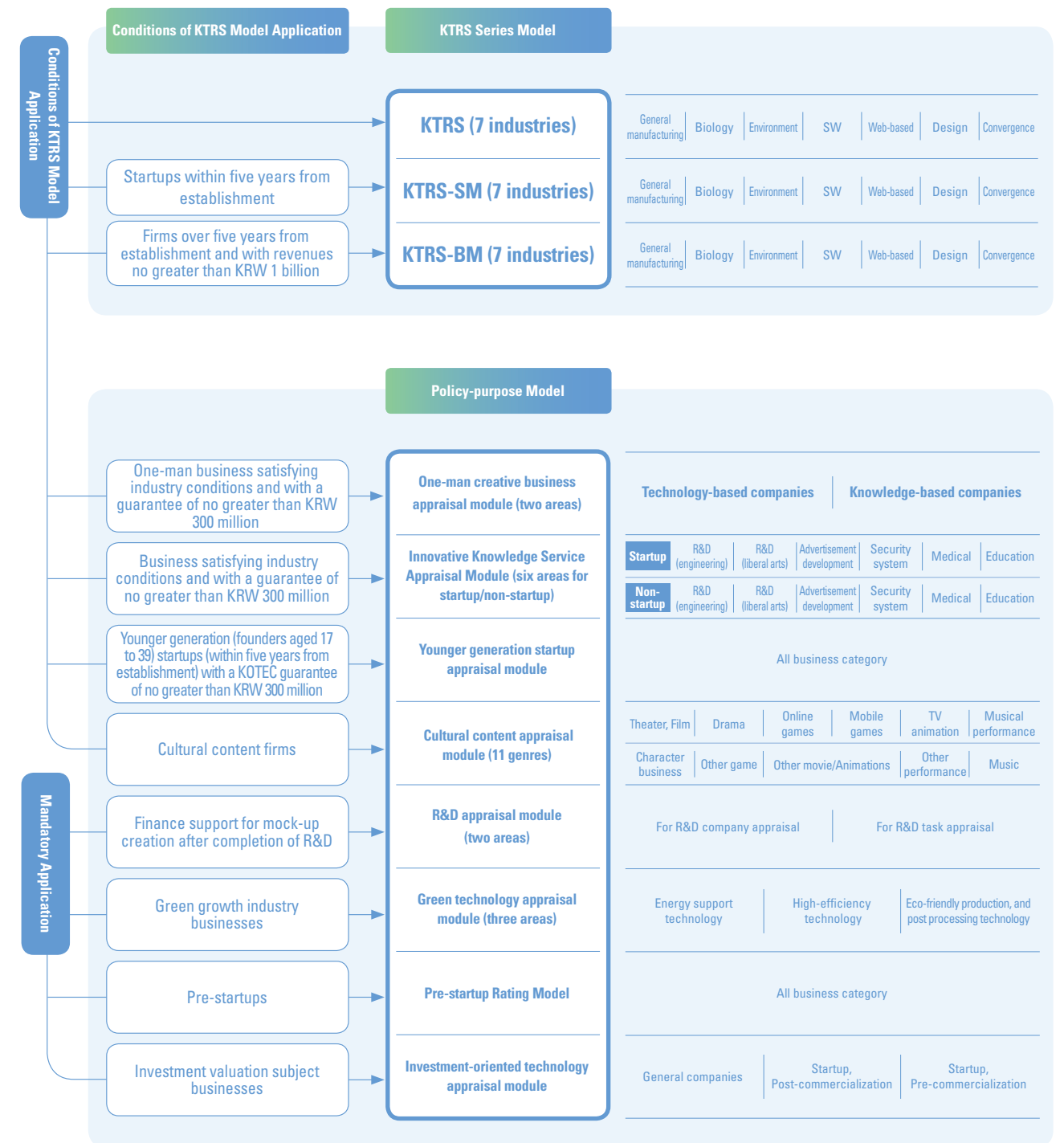
Machinery	Telecom	Electronics & Electricity	Materials & Metals	Chemical	Textile	Biology	Environment	Financial Accounting	Patent Law	Culture & Contents	Others	Total
173	128	133	88	82	13	97	36	156	50	52	66	1,074

#### Technology appraisal system

KOTEC developed and operates its proprietary technology appraisal system, the KOTEC Technology Rating System (KTRS), to assess and grade intangible technology and knowledge on the grounds of technology competence, business feasibility, and marketability, which have been difficult to evaluate with a finance-based credit rating system. Optimized for technology financing, KTRS takes into account the future potential and risks of a technology-based business. Since its introduction in July 2005, it has proven its ability to forecasting default rates and risks with continuous verification and improvements.



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

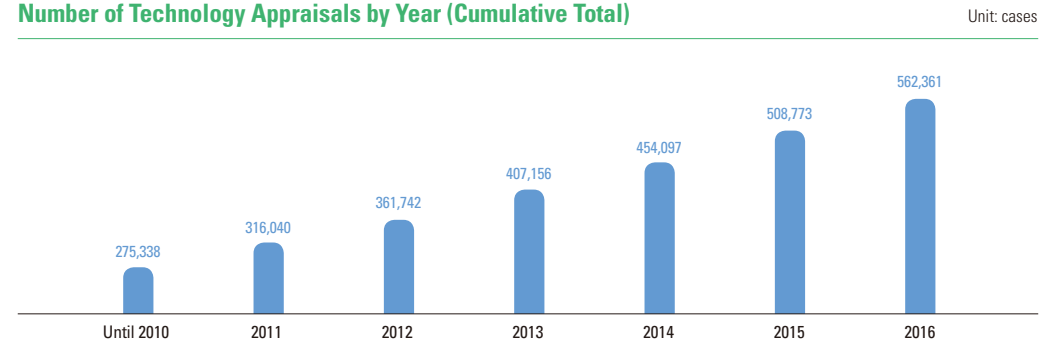


## 03. Performance of Major Operations

### Technology appraisal performance

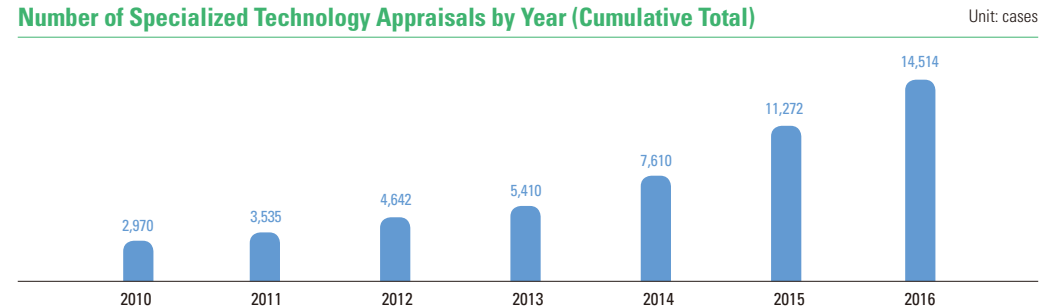
Since the launch of its technology appraisal business in March 1997, KOTEC has completed a total of 560,000 cases as of the end of 2016, securing KOTEC's status as the leading technology appraisal institution in Korea.

#### Number of Technology Appraisals by Year (Cumulative Total)



Technology appraisals for the government or public sector and technology appraisals for the private sector with fees higher than KRW 2 million are more challenging than other types of technology appraisals. They require more sophisticated expertise and objectiveness and greatly contribute to the expansion of the domestic market for technology appraisal and to the promotion of technology financing.

#### Number of Specialized Technology Appraisals by Year (Cumulative Total)



KOTEC was designated as a TCB (Technology Credit Bureau) institute in July 2014 by the government. It was given the responsibility of building a TCB system and the goal of supporting the growth of technology financing in cooperation with banks and private sector TCBs. From August 2014 to the end of 2015, KOTEC developed and implemented a temporary version of the Partial Interest Support System\* for TCB-linked credit loans in order to promote the settlement of the TCB system and alleviate user interest burdens.

#### TCB-linked Support Provided

TCBs Provided (Cases)			Partial Interest Support (KRW million)	
2H 2014	2015	2016	2H 2014	2015
4,360	9,639	13,062	933	1,988

\* For loans provided to the excellent technology enterprises, KOTEC covers 1-3% of the interest depending on the enterprise's technology level.

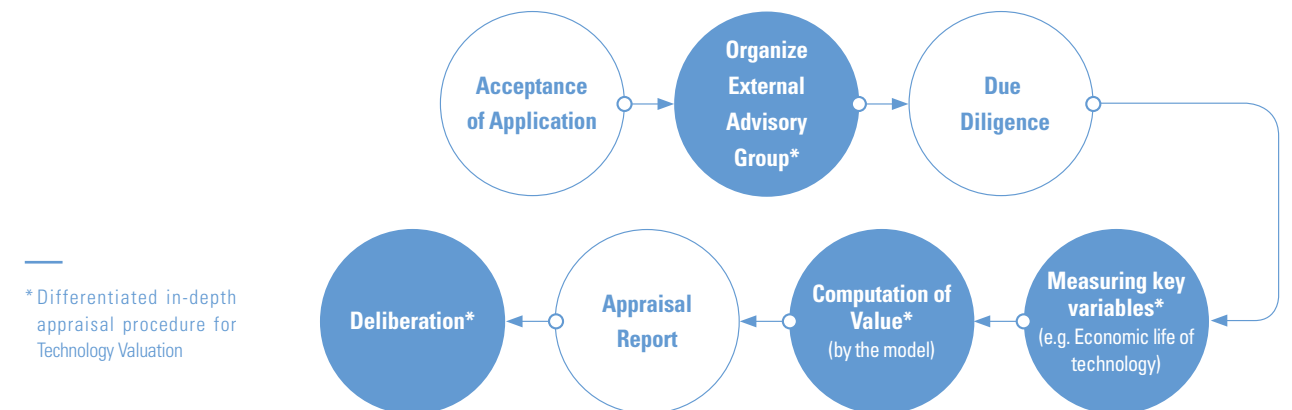
### C. Major Progress and Achievements of Technology Appraisal in 2016

#### Serving as a frontier for the Korean intellectual property (IP) financing

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 Valuation Guarantees and Technology Value-linked Guarantees, in 2006 for the first time in Korea. It restructured these programs into the IP-based Guarantee System which allowed for greater coverage 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 on top of the general technology appraisal process, it requires much more sophisticated technology and expertise as well as higher costs. 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



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 Provided

Category	2013		2014		2015		2016	
	Cases	Amount	Cases	Amount	Cases	Amount	Cases	Amount
IP Valuation Guarantee	1,020	1,915	1,313	2,602	1,794	3,811	2,323	5,278
IP Acquisition Guarantee	118	190	266	350	455	535	714	863

Unit: cases, KRW million



## 03. Performance of Major Operations

### Enhancing comprehensive R&D support for SME technology innovation

KOTEC introduced its R&D Guarantee Program in 2008 to identify high-potential R&D projects and provide tailored supports to each stage of entire R&D life cycle in order to provide financial support and facilitate technology development and commercialization.

#### Entire R&D Life cycle Guarantee System

Stage	Planning or Development	Prototype	Commercialization or Production
Development			
Pre-commercialization			
Commercialization			
Eligible Fund	R&D costs for the technology applied	Cost needed for prototype after R&D completion	Cost for capital investment or working capital for commercialization and production after R&D completion
Appraisal Method	Business feasibility test and economic value analysis		Business feasibility test
Appraisal Model	R&D Appraisal Model		KTRS / KTRS-SM

In 2016, KOTEC provided a record high of KRW 4.2 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 million

	2013		2014		2015		2016	
	Cases	Amount	Cases	Amount	Cases	Amount	Cases	Amount
Total R&D Guarantee	6,713	24,022	8,543	29,515	10,853	34,257	13,860	41,937
Development	2,650	4,506	3,601	5,987	5,023	8,103	6,835	10,651
Pre-commercialization	687	1,208	687	1,139	731	1,210	749	1,180
Commercialization	3,376	18,308	4,255	22,389	5,099	24,944	6,276	30,106

In 2016, KOTEC expanded the coverage of R&D finance support to open R&D (outsourced), from in-house R&D, which further contributed to the growth in R&D (IP), and leading to KOTEC's receipt of the "Chairperson of presidential council on Intellectual Property(Prime Minister) Award."

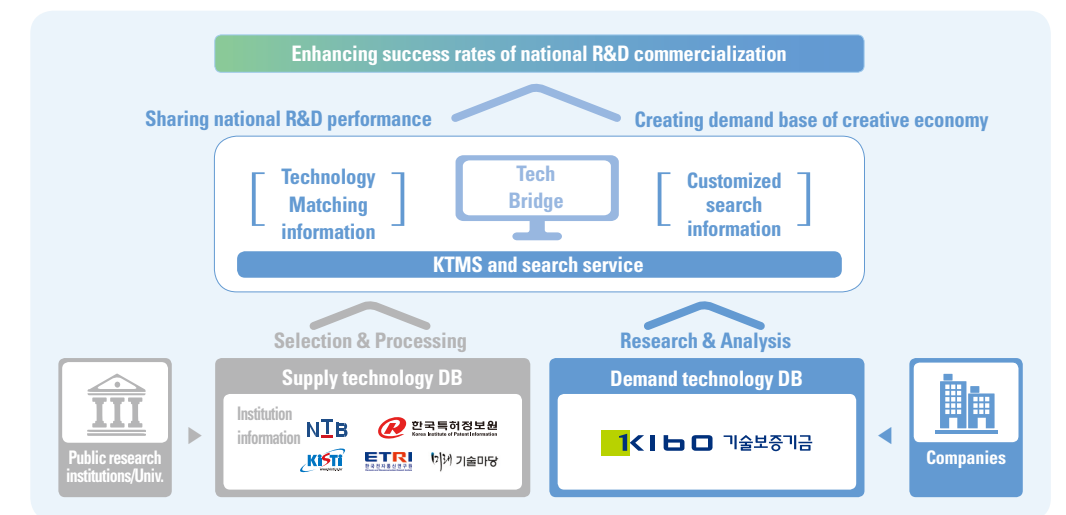
#### Open R&D Support System



### Establishing a demand-oriented technology transaction platform in Korea

KOTEC launched a technology transfer and commercialization platform in January 2014 to fully tap into the R&D outcomes of the nation. Tech-Bridge, the dedicated online platform for technology transfer, was launched in September 2014, and the database has accumulated 304,820 cases of technology supply information and 3,873 cases of technology demand information as of the end of 2016.

#### Technology Transaction Platform: Tech-Bridge

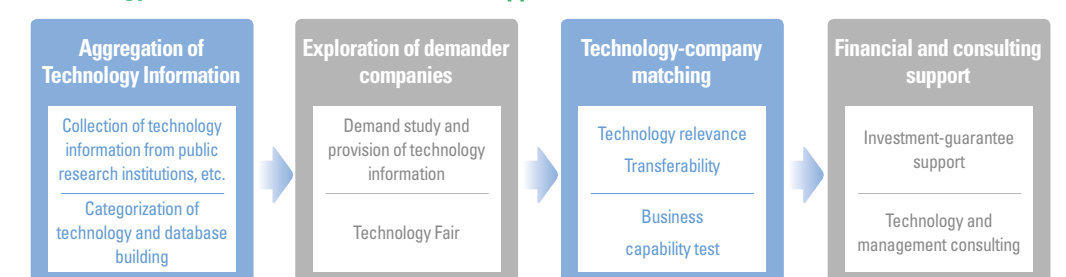


\*KIBO Technology Matching Service (KTMS): Patented in October 2015

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

KOTEC signed technology demand discovery agreements with financial institutions (5 banks as of the end of December 2016), strengthened networks with public research institutions and technology information centers (MOUs signed with 153 institutions as of the end of 2016), and systematically improved the technology and commercialization support process. As a result, KOTEC logged 1,415 cases of technology transfer demands and provided KRW 41.4 billion for technology transfer guarantees in 2016.

#### Technology Transfer and Commercialization Support Process



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

### 03. Performance of Major Operations

#### 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 Korea Exchange in order to facilitate a technology-oriented venture capital market. The program enables technology-based SMEs to IPO to KOSDAQ or KONEX based on their technology appraisal results even if they were not able to meet financial requirements.

#### Preferential IPO for Technology-based SMEs

Category	Details			
Requirements	Companies that received technology appraisal ratings of BBB from 2 or more from specialized appraisal institutions and A from one or more			
Performance		2013	2014	2015
	Appraised SMEs	4	5	12
	Listed SMEs	1	2	3

KOTEC also developed and distributed the “Investment-oriented Technology Appraisal Model” which identifies appraisal benchmarks for growth potential and investment returns in order to encourage investment in excellent technology firms, including private VCs. In April 2016, on the basis of the model, KOTEC launched the Technology Appraisal Certification program for investment. Capitalizing on its technology appraisal expertise, the company has participated in public technology appraisal projects for IP and R&D commercialization, including R&D Planning Support Project (Small and Medium Business Administration, 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 and market details of each industry, to improve the expertise of the technology financing staff of commercial banks and venture capitals, and to provide them with networking opportunities to exchange relevant information.

#### Specialized Training Program for Technology Financing

Curriculum	Understanding of Technology Finance (online)	Technology Credit Appraisal (on-site)
Details	Technology Appraisal Theory and Technology Finance (Basic)	Preparation for Level 3 Appraisal Test
No. of Participants	2,016	51

In 2016, KOTEC launched the “Technology Credit Appraiser” Qualification Test Program to cultivate technology finance specialists. Through this program, 1,023 private appraisers (Level 1: 13, Level 2: 187 and Level 3: 823) were certified. 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 actively transferred KTRS to increase the international standing for and awareness of its proprietary technology appraisal model, and been increasingly received 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. With global recognition of the innovative nature of KTRS, KOTEC has developed a road map to apply KTRS in Europe.

#### KTRS Deployment Road map in Europe

step. 01 Consensus Building (2016)	step. 02 Pilot Test (2017)	step. 03 Full Test (2018)
<b>Request from EC for support to apply KTRS in Europe (Nov. 2016)</b>	<b>Review of KTRS localization feasibility and pilot test</b>	<b>Evaluation of KTRS application to 30-50 environmental enterprises in Europe</b>
- Exploring possibilities of KTRS as an appraisal model for innovative European enterprises	- KTRS review and model design for localization in Europe	- Application of KTRS as an appraisal model for innovative European enterprises

\* Introduced as an international best practice case by EU IPF (2012) (Designated as a Good Practice at the Innovation Partnering Forum)

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.

#### Global Demand Building for Technology Rating

Category	Partner	Details
<b>Working Practice Coaching</b>	State Agency for Technology Innovation (SATI) of Vietnam	User training for Application of Vietnam Technology Rating System (VTRS) (Nov. 2016)
<b>Localization Support</b>	Thai Credit Guarantee Corporation (TCG)	Pilot test of Thai Technology Rating System (TTRS) (Nov. 2016)
<b>Initiate into Financial System</b>	Fondo de Garantia para Prestamos a la Pequena Industria (Fogapi) of Peru	Initiate FCGAPI into Technology rating and guarantee system (Jun. 2016)

KOTEC also established a global market penetration 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 market penetration, KOTEC has built a bridgehead for them by capitalizing on its vast amounts of information (including a database of 70,000 + companies), financial support schemes 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 is able to identify candidates and provide them with customized services, including localization, sale channels and/or global technology transfers.

**\* SMBA**  
Small and Medium Business Administration (SMBA) was reorganized and expanded into the Ministry of SMEs and Startups in July, 2017

### 03. Performance of Major Operations

\* Article 10 of Paris Agreement, December 2015

\*\* Assistant Direct General Per Bertilsson of Global Green Growth Institute (GGGI), Director Won-mok Choi of Asia Development Bank (ADB), Dr. Yorimasa Suwa of Japan Intellectual Property Association (JIPA), Dr. Zitouni Ould-Dada, Head of the Technology Unit at the Division of Technology Industry and Economics of United Nation Environment Programme (UNEP) etc.

#### Leading climate technology finance

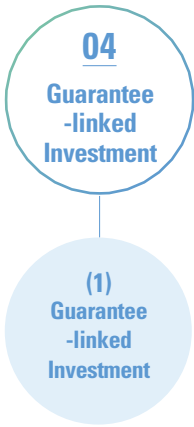
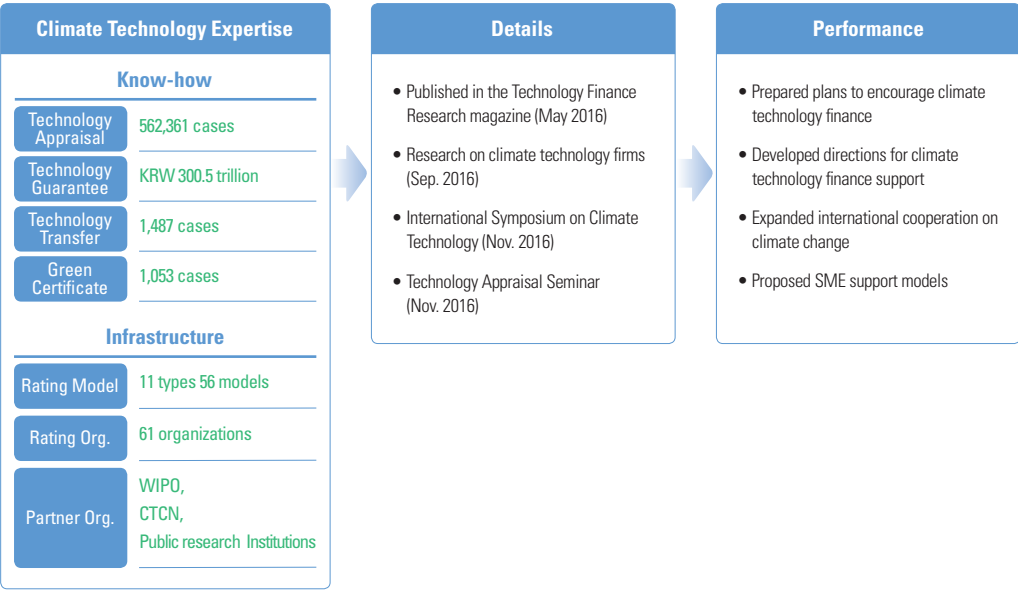
Under the new climate regime, all member countries of the UN are required to take strong measures to reduce their greenhouse gases, and the technology transfer\* of environmentally sound technologies is promoted as a solution to combat climate change issues. Keeping with such movement of the international community, KOTEC joined the Climate Technology Center Network (CTCN), a UN-affiliated organization, as the first member from the Korean financial sector.

As Korea expects as much as KRW 33.7 trillion in additional fiscal expenditure to meet the obligations of greenhouse gas reduction after 2020, KOTEC has stepped forward in this effort by joining CTCN. Based on its climate technology finance capability, It also has prepared financing instruments that would help efficiently reduce greenhouse gases and has contributed to enhancing public awareness on the climate financing.

With 2016 marking the beginning of its climate finance initiatives, KOTEC conducted a variety of researches and surveys to explore climate technology finance systems for SMEs and co-hosted an international climate technology symposium by inviting globally renowned scholars\*\* in the climate technology realm to share information on policy trends and to establish direction for cooperation.

KOTEC also analyzed current condition of climate technology firms in Korea and obstacles they are facing via survey and in-depth interview to understand their status and challenges, and developed a relevant SME support model. It hosted a technology appraisal seminar, inviting SMEs, government organizations, public institutes and research centers, etc., to showcase its SMEs support model designed to help climate technology SMEs with their efforts to develop, transfer or commercialize technologies and their global penetration thereupon.

#### Climate Technology Finance Performance



#### A. Overview

KOTEC has been operating its guarantee-linked investment program since January 2005 in order to help startups and technology-based SMEs to better access direct financing and to improve their financial restructure. The program, through which KOTEC makes direct investment in association with guarantee provisions, was stipulated as a unique responsibility for KOTEC in March 2012 (effective June 2012) by the amendments made to the Korea Technology Finance Corporation Act. KOTEC in particular focuses on investing in startups and innovative technology-based SMEs that have not previously received institutional investments in order to address the information gap for SMEs and to provide assurances (or equivalent resources) to prospective investors. By doing so, KOTEC has been faithfully playing the role of pump priming to catalyze follow-up investments from the private sector. KOTEC is planning to expand the scope of the guarantee-linked investments program in order to vitalize the “investment-focused” venture capital market, while reducing its dependance upon indirect financing like guarantees and loans.

#### B. Investment Type

The investment is done in the form of the acquisition of stocks, convertible bonds (CB), and bonds with warranties (BW).

#### C. Companies Eligible for the Investment

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

- ① Startups in their first five years of establishment.  
\* Companies supporting new/future growth engines and/or dedicated to R&D projects worthy of policy support may be exempt from this requirement.
  - ② Firms that are already under a guarantee (or under an approved guarantee).
  - ③ Excellent technology firms with technology appraisal grades of BB or higher.  
\* However, in the case that the investment amount exceeds KRW 1 billion or the integrated amount of investment and guarantees exceeds KRW 5 billion, the technology appraisal grade must be BBB or higher.
  - ④ Venture businesses by law (or Inno-Biz firms).

#### D. Investment Limit on Individual Enterprises

An investment in an individual firm shall be capped at KRW 3 billion, and the integrated limit (guarantee + investment) at KRW 10 billion, provided that the investment amount shall not exceed twice the guarantee amount for the corresponding firm.

Category	BB or higher	BBB or higher
Investment Limit on Individual Company	KRW 1 billion	KRW 3 billion
Integrated Limit on Individual Company (Guarantee + Investment)	KRW 5 billion	KRW 10 billion
Investment Limit on the Affiliates	KRW 3 billion	KRW 3 billion

\* Investment Limit: KOTEC investment amount

\* Integrated Limit: A gross amount of the guarantee and investment provided by KOTEC, KODIT, and KOREG



## 03. Performance of Major Operations

### E. Investment Process

KOTEC comprehensively evaluates investments, taking into account technology competence, marketability, business feasibility, credit ratings, and ROI, based on well-established technology appraisal procedures.



### F. Operating Performance

Since its first investments in 2005, KOTEC has invested a total of KRW 212.6 billion in 186 companies as of the end of 2016. Of these companies, 19 have gone public on KOSDAQ and have posted an accumulated earning rate of 7.3%. The following table details the operating performance of the KOTEC's investment by year.

Annual Investment Amount and Earnings

Category	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total	Outstanding
No. of companies	2	10	7	8	9	8	4	2	30	35	35	36	186	132
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	2,125.6	1,537.2
Earnings	-	-	29.0	2.1	19.8	5.2	21.4	41.1	22.8	△17.8	22.3	9.8	155.7	

Unit: No. of companies, KRW 100 million

### (2) Guarantee with Investment Options

### A. Overview

This program, implemented in April 2014, provides guarantees with an option that allows KOTEC to convert the corresponding guaranteed loan into an investment before the maturity of the guarantee (from a given point on) after it has provided seed money (in the form of a guaranteed loan) for a startup with excellent technology. The coverage, eligibility and guarantee limit of this program were extended in February 2016 increase eligibility for more companies.

### B. Eligible Companies

Any technology-based startup within its first five years of establishment and with a technology appraisal grade of BB or higher

### C. Eligible Loans

Any working capital loan from financial institutions on the condition of lump sum payment on maturity

### D. Guarantee Limit and Period

Up to KRW 1 billion per company and up to five years

### E. Guarantee Process

#### Guarantee with Investment Option Process



### F. Preferential Conditions

Full guarantee (100%) and fixed guarantee fee rate (0.5%)

### 03. Performance of Major Operations



#### A. Venture Startups Class

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

##### 2016 Venture Startup Class Graduates

Session	1st	2nd	Total
No. of Graduates	60	68	128

Unit: Persons

#### B. Youth & Technology Startup Class

To help budding entrepreneurs aged 19 to 39 prepare their technology startups or improve upon their already established startups of less than one year since their founding, KOTEC provides free classes which introduce business models, ways of nurturing entrepreneurship and KOTEC's support programs. These classes are designed to form a startup ecosystem where youth's creative ideas or technologies can easily advance into next commercialization stage.

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.

##### 2016 Youth & Technology Startup Class Graduates

Session	1st	2nd	3rd	4th	5th	6th	Total
No. of Graduates	28	36	49	44	19	30	206

Unit: Persons

#### C. Specialized Class for CEOs of High-growth Startups

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.

##### 2016 Growing Startups CEO Class Graduates

Session	1st
No. of Graduates	41

Unit: Persons

#### D. Technology & Management Consulting

KOTEC operates a technology and management consulting program for the entire cycle of a business and provides a business diagnosis for management improvement and failure prevention, in order to help SMEs mitigate their risk via management systems.

In particular, KOTEC provides consulting services for pre-startups and early-stage startups in order to help them successfully launch and settle a new business. It seeks to guides startups onto the right path for a successful business based on KOTEC's insightful business analysis and various enterprise support systems.

In 2016, KOTEC implemented its Default Prevention Support Program for SMEs (formerly known as the SME Health Management System) in cooperation with the Small and Medium Business Administration (SMBA), Korea Credit Guarantee Fund (KODIT) and Small and Medium Business Corporation (SBC). This program provides a full diagnosis and prescription (customized consulting) to help SMEs solve business problems, prevent management crisis and pursue growth. In 2015, KOTEC began business diagnosis consulting by tapping into its own resources and tools to support normalization efforts of the businesses that have technology and business potential but are under duress.

In the second half of 2014, KOTEC launched a professional consulting business for its clients at each growth stage, ranging from startups to growing enterprises to rehabilitation businesses, completing a business life cycle framework for consulting. This completes the entire consulting support cycle for every stage of business development.

##### Technology & Management Consulting Framework

Pre-startup Stage	Startup Stage	Growth/Maturity Stage	Crisis/Rehab Stage
<b>Startup Mentoring Program</b> (Pre-startups, Start within one year of establishment)	<b>Diagnosis Consulting</b> (Pre-entrepreneurs, Pre-guarantee support business etc., 3MDs)	<b>Specialized(in-depth) consulting</b> (Companies in growth, emerging and rehabilitation stage, etc., 4MDs or more)	
		<b>Diagnosis Consulting</b> (Companies under duress and/or in need of restructuring)	
	<b>Startup Consulting</b> (Venture startup class graduates, 1MD)	<b>Default Prevention Support Program for SMEs</b> (Businesses under restructuring or rehabilitation)	

\* MD: Man-Day (A consulting work unit conducted by one professional per day (8 hours))

##### 2016 Technology and Management Consulting Support

Consulting Type	Startup Mentoring Program	Startup Consulting	Diagnosis Consulting	Specialized Consulting	Preemptive Financial Health Program for SMEs*	Total
No. of Support	1,261	40	369	104	242	2,016

\* Previously, SME Health Management System

Unit: Cases

### 03. Performance of Major Operations

#### E. Business Support System by Growth Stage

Business Support System by Growth Stage

① Pre-Startup Stage	
Support Program	Description
Pre-Guarantee for Pre-startups	• Set a support limit (amount) for pre-startups and provide the support immediately after starting a business
Younger Generation Startups Preferential Guarantee	• Support startups in the first five years of their foundation, and established and run by young owners (aged 17-39)
Growth Program Customized for Startups	• 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 firms established by those in their 40s and 50s
Patent Startups Preferential Guarantee	• Support startups in 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, preparation for commercialization, and commercialization) through R&D finance matching processes
Youth & Technology Startup Class	• Provide education and training for pre-entrepreneurs and entrepreneurs (of startups in their first year of operation) aged 19 to 39, to introduce business models and KOTEC's programs
Venture Startup Class	• Provide practical training on business (e.g., funding strategies, HR, law, and IP management) for to-be and infant-startup entrepreneurs

② Growth Stage	
Support Program	Description
Guarantee for High Value-added Service Projects	• Provide guarantees for the entire project cycle of a contract, such as IT solution development, SI service outsourcing, and cultural content creation
Preferential Guarantee to Foster Star Venture Businesses	• Develop excellent ventures at their 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 commercialization of IP
Support for Job-creating Firms	• Provide preferential guarantees for firms with large job creation potential and funding for recruiting new staffs
Cultural Industry Completion Guarantee	• Support firms creating cultural content (movie, game, cartoon, animation, digital content, music, and broadcasting)
Guarantee-linked Investment	• Invest in association with guarantees to improve SME financial conditions and in increase direct financing for SMEs
Venture & INNO-BIZ Certification	• Assess and confirm Venture businesses (technology appraisal guarantee firms, R&D firms, and to-be venture businesses) and Inno-Biz firms governed by the SMBA
Technology Valuation (Technology Transfer/ Transaction)	• Appraise technology for transfer or sale to objectively evaluate the value
Technology Appraisal Certification (Reference for Investments/Loans)	• Furnish technology appraisal certifications that include a grade and consulting to financial institutions to promote investment and loan financing
Specialized Class for Growing 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)

③ Maturation Stage	
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 technology projects

④ Crisis/Rehabilitation Stage	
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 guarantees for SME owners with promising restart potential
Default Prevention Support 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



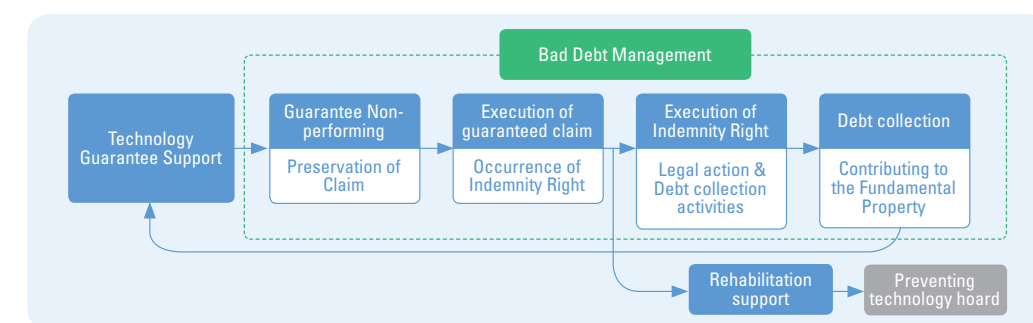
## 03. Performance of Major Operations

06

Rehabilitation  
Support & Bad  
Debt Collection

### A. Promoting Restart Financing for Earnest-failure Business Owners (Rehabilitation Support)

KOTEC shifted its paradigm of non-performing debt management from collection-oriented approaches to new systems which support rehabilitation of earnest-failure businesses in order to create a more friendly finance environment where rechallenge is encouraged. Since the implementation of the Restart Business Revival Support Guarantee in April 2012, KOTEC has continuously increased the number of recipients and the support amount provided, to fully serve its mandate as a public guarantee institution. With these efforts, KOTEC provides a foundation for entrepreneurs with previously failed businesses to restart, pursuing a balance between debt collection and support for obligors.



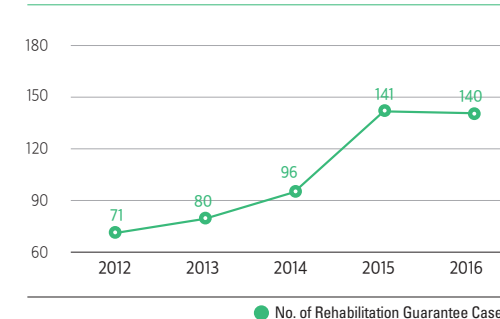
#### Promoting the Restart Business Revival Support Guarantee for multiple (high volume) obligors

In order to provide rehabilitation guarantee support for multiple obligors, KOTEC, in cooperation with the relevant authorities, amended the guarantee procedure. As a result, the ratio of the debt relief to principal was increased to 75%(up from the previous 50%), and those who are defaulting on tax payment and those who failed within the last 3 years became eligible for the rehabilitation guarantee in so far as some other conditions are met.

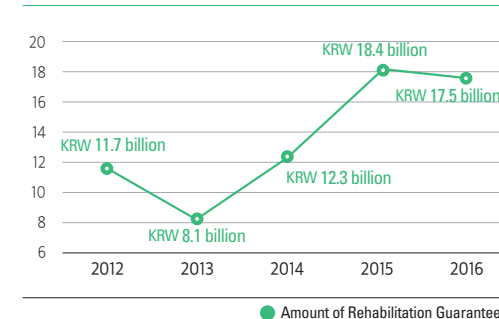
#### Preventing moral hazard from failed CEOs (restarting businesses)

In Korean society, the public typically views failed CEOs as having done wrong morally. This in turn has impeded the promotion of rehabilitation support guarantees. To address this situation, KOTEC implemented the Earnest Management Assessment Program in 2016 to pre-evaluate the potential moral hazard of failed CEOs. This program is designed to identify issues in criminal records or cases of immoral management practice, in cooperation with National Police Agency and SMBA. Applicants who cannot pass the 2-stage pre-evaluation process shall not be eligible for rehabilitation guarantee support. With this program in place, 26% of applicants with a history of wrongdoing were rejected through the pre-evaluation process, which in turn contributed to financial soundness of KOTEC.

No. of Rehabilitation Guarantee Cases



Amount of Rehabilitation Guarantee



Despite the strict review criteria including the moral hazard prevention program, as many as 140 companies (accounting for 90% of the rehabilitation guarantee market) were granted the guarantee support for two consecutive year since 2015.

#### Increasing follow-up activities for successful rehabilitation financing

In addition to its rehabilitation guarantee provisions, KOTEC has also launched and operated effective programs to prevent second failure (Specialized Lectures for Restarting CEOs and Management Consulting). All these measures were designed to establish a comprehensive support system that encompasses the following cycle: identification of earnest-failure business owners; provision of rehabilitation support guarantees; post management and support activities; and restarts for success. Furthermore, KOTEC proactively identified and promoted success cases from these rehabilitation efforts to raise public awareness on social value of the rechallenge efforts.

Category	Specialized Lecture for Restarting CEOs	Technology and Management Consulting for Restarting Business
Participants	<ul style="list-style-type: none"> <li>33 CEOs of companies under rehabilitation guarantee</li> </ul>	<ul style="list-style-type: none"> <li>13 companies under rehabilitation guarantee</li> </ul>
Details	<ul style="list-style-type: none"> <li>Professional lectures (tax, accounting and labor management)</li> <li>Special lectures by successful restarters, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Technology improvement and general management consulting by external specialists</li> <li>5 times in 2014 → 7 in 2015 → 13 in 2016</li> </ul>

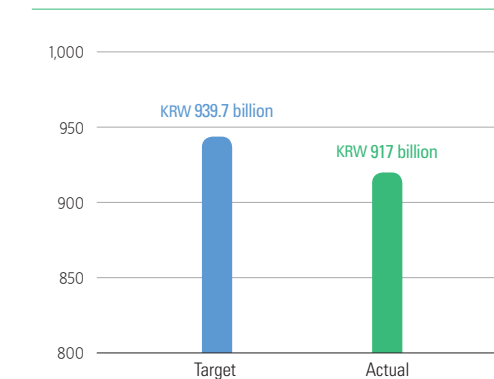
### B. Efficient Management of Bad Debts (Bad Debt Collection)

Along with the active supports for the rehabilitation of earnest-failure businesses, KOTEC launched enterprise-wide efforts to improve default and indemnity rights management so as to secure guarantee resources and enhance sound portfolio management.

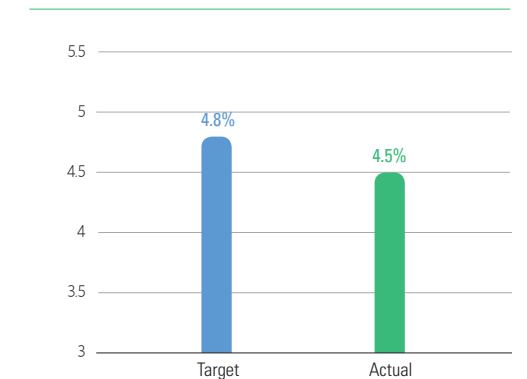
#### Stable management of default rates

KOTEC has built a systematic default management system where the performance of each branch is evaluated by target default rate. Each year, the risk rates of each branch is calculated based on its guarantee portfolio and an estimated annual risk amount is allocated to each branch. 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 its default rate at 4.5%, within the annual target of 4.8% in 2016.

Net Increase in Default Amount



Default Rate



### 03. Performance of Major Operations

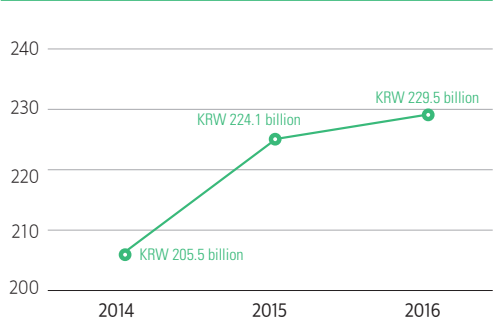
#### Improving financial security by increasing bad debt collection performance

Although debt collection conditions have become more difficult as a result of exemptions or elimination of joint guarantees for startups and of increases in the right to indemnity with limited collection rights (by rehabilitation programs), KOTEC successfully collected KRW 229.5 billion from bad debts in 2016, up KRW 5.4 billion from the year before. Thanks to this debt recovery efforts, KOTEC was able to secure some guarantee resources of approximately KRW 2.2 trillion.

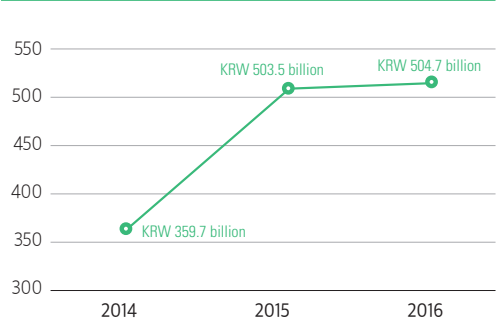
#### Efficient receivables management via sale of special receivables

KOTEC has sold special receivables, resulting in a total aggregate sale of KRW 6.9 trillion as of the end of December 2016 since its first disposition in 2011. This has improved efficiency by eliminating the existence of uncollectable receivables and by removing limits on the rehabilitation procedure which prohibited write-offs. This also helped debt collection staff focus on more collectable debts and efficiently manage their collection activities.

Bad Debt Collection



Special Receivables Sold



#### A. 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.

By launching several new business projects (such as the TCB, technology transfer and cultural contents businesses) and creating new positions (22), KOTEC was able to hire 40 new full-time employees in 2016. The new staff members are all under 34 years old, and the majority of positions were given to those from underprivileged backgrounds, including three beneficiaries of employment support, three individuals with disabilities, three high-school graduates, and 20 local talents(50%).

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 six new doctoral degree holders (15%), and 12 science/engineering majors (30%) in 2016, 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 40% (16 people) of the 40 newcomers in 2016, and over 70% (45, 72.6%) of the 62 interns. Furthermore, KOTEC transferred six female temporary workers (who had been working for KOTEC for one year or longer) into permanent contracting positions in an attempt to improve their overall job security and decrease the number of part-time workers.

#### New Employees (Full-time) in 2016

Category	Total	Employment Support	Disabled	Intern Experienced	Local	Female	Science Engineering	High School Graduates
New Employees	40	3	3	11	20	16	12	2

Unit: persons

#### Youth Intern Employment Record

Category	Total	Disabled	Local	Female	High School Graduates
2016	62	10	38	45	17
2015	52	7	28	35	8
Total	114	17	66	80	25

Unit: persons

03. Performance of Major Operations

B. Manpower Policy

KOTEC believes that competent and creative talents capable of developing future value through imaginative thinking are the most precious of assets. Therefore, it has implemented various programs for staff to help them to become the best in their fields.

For efficient resource development, KOTEC established a Human Resource Development Institute dedicated to HRD training center for HRD training in Yongin, Gyeonggi Province.

KOTEC's HRD system is built around an expert pool of in-house lecturers, the Cyber HRD Center, and the Cyber Cultural Center. It focuses on three categories of basic competencies for all staff: leadership, job skill, and the corresponding credit earning systems. For each category, the system is composed of basic courses, professional courses, and advanced courses to provide a training road map tailored to the position and job responsibilities of each staff.

To better meet the needs of the digital era, to minimize the gap from off-site trainings, and to ensure that self-initiated learning throughout the year takes root, the Cyber HRD Center has been established to put many of the courses online and keep business running efficiently.

The 2016 resources were developed based on the resources management and development plan in conjunction with the mid-to-long term management plan. A comprehensive education training plan for 2016 was built upon feedback from the training and education programs of the previous year.

In particular, KOTEC focused on establishing training courses for practical work skills in 2016. It added a Technology Appraiser Advanced Class and a Management Advanced Class, among others, to the basic curriculum for the supplementary technology appraiser program and created a professional consulting program by establishing a consulting training course. It also offered higher education opportunities, including an overseas MBA program (one participant), advanced finance courses at national universities (three participants), a pre-CEO course at the Korea Banking Institute (five participants), and scholarships for graduate students in Korean universities (40 participants), to cultivate future leaders. To promote a friendly corporate culture and to expand family-friendly education opportunities, KOTEC provided a wide range of training programs, including the Family Love Camp (2nd, 201 participants, in June), cultural experience trainings by region (Jeonju, 242 participants, in November), reinvigoration training for long-term employees (49 participants who have been working for KOTEC for 20 or more years, in May), technology and cultural experience training (59 participants, perennial), and labor-management unification training (105 participants, in October). It also operated a leadership program for each level to promote innovation and foster remarkable talent.

2016 Training Records

Training Type	2013	2014	2015	2016
In-House Off-Site Training	1,711	2,948	2,937	1,956
External Off-Site Training	535	699	799	1,027
Cyber Training	4,158	3,078	3,410	3,884
Overseas Training	60	58	61	61
Total	6,464	6,783	7,207	6,928

Unit: persons

08  
Ethical  
Management

A. Goals and dedicated organizations

- Improve the ethical management framework to lead ethical practices within the public sector
- Strengthen the ethical management infrastructure to promote a clean culture of integrity within and outside the organization

Category	Consultative Bodies	Roles and Responsibilities	Performance
Policy	Ethical Management Committee	Decision making on clean policies	Promoted staff integrity and reliability
Internal Acting Bodies	Anti-corruption Committee	Working group for the Ethical Management Committee	Improved upon 17 unfair or unreasonable systems
	Integrity Mentor	Leading ethical management activities at business fields	Improved ethics score (9.32)
	Compliance Department	Ongoing monitoring and supervision of compliance	Reviewed 8,152 cases of work process
External Advice	Clean Ombudsman	Monitoring and evaluating corruption externally	Reviewed 96 contracts and implemented 2 system improvements
	Clean Partnership	Sharing best clean practices internally and externally	Promoted 9 best practices externally, and introduced 4 into KOTEC

B. Ethical management progress

- Preventive ethical management activities to establish a clean culture

① Ongoing, proactive preventive measures to preempt corruption

Measure	Details	Performance
Compliance Program	Field inspection for anti-corruption and review of key items (2,991 cases) by compliance officers	Best practices of Anti-corruption Infrastructure Implementation (by ACRC)
Reporting Center	Clean Reporting Center, Solicitation Reporting Center, Financial Irregularity Reporting Center etc.	
Review of Code of Conduct	Corruption prevention efforts via review of the Code of Conduct	
Customer-participating Prevention Activities	Signing of Clean Agreement, Transparent Management Contract etc.	

- ② Preemptive measures against illegal actions by guarantee brokers to ensure operational integrity of guarantee service
  - Strengthen the system to prevent illegal actions by brokers and prevent guarantee default through special reporting periods

Performance	Details
Fraud Warning System (FWS)	Establishing a warning system to detect companies that are deemed to have any intention of fraudulent (deceptive or fake) transactions
Administrative Information Search	Improving the system to retrieve CEO national healthcare payment information and administrative information from the Ministry of the Interior
Special Reporting Period	Preventing broker engagement via special reporting period with PR activities through KOTEC's website, outdoor ads (posters) etc.
Result	Prevent corruption involved with illegal actions by brokers (zero claim of suspected broker involvement)



03. Performance of Major Operations

③ Ethical management education personalized for each job

- Enhancing staff ethical mindsets through personalized education programs for their jobs and positions

Category		Subjects of Education	Details
Internal	By Life-cycle	New hires, working level and executives etc. (231 people)	Ethical code, clean management issues, on-site training at the Clean Training Center
	By Job Type	Staff in charge of HR, contract, budget, clean campaigns, compliance and anti-corruption activities	Case-centered education (e.g. whistle-blowers)
	Field Staff	All branch field staff	Visiting Ethics Class by KOTEC executives, CS Clinic etc.
	By Topic	All staff (3 times/year)	The Improper Solicitation and Graft Act, Code of Conduct, Whistle blow etc
External	Guarantee Recipients	New guarantee recipients, and certified venture businesses	Send ethics codes and regulations, including the Improper Solicitation and Graft Act (monthly)
	Partners	Outsourced companies and call center staff etc.	Whistle-blowers, the Improper Solicitation and Graft Act etc.
Monitoring and Feedback		Survey of satisfaction with the clean activities: understand satisfaction levels and improve the system	
		Internal/External evaluation: Measuring effects to integrate into the next year's clean strategies	

● Sharing and promoting best practices for ethical management

① Sharing anti-corruption and violation cases to promote a clean culture

Subject		Best Practice	PR Tool
Internal	All staff	Ethics code, including Code of Conduct etc. (monthly)	Clean alert (e-mail)
		Clean Kibo-Day, ethics issues, comments (online) etc.	Groupware
External	Clients using Guarantee	Client-engagement policies, including Clean Agreement etc. (monthly)	Clean echo (e-mail)
	Public	Private contracts, audit results, corporate card bill details etc.	KOTEC website
		Whistle-blower protection and illegal (undue) receipt of subsidies, etc.	KOTEC magazine

② Sharing best practices of 'Clean Kibo' with domestic and overseas institutions and building a cooperation network

- (Promoting a clean image) Sharing KOTEC's clean culture system with guarantee agencies from Vietnam and Taiwan

Category		Subject	Details
Domestic	Clean World Practice Body	12 public institutions, including Military Mutual Aid Association	Sharing best anti-corruption practices with each institution
	Youth Technology Startup Class	Pre-entrepreneurs and early startup CEOs	Introducing whistle-blower protection and clean activities
Overseas	Vietnam	National Technology Innovation Fund (NATIF)	Preparing Code of Conduct and whistle-blower protection system in Vietnamese and English, and providing training
	Taiwan	Small and Medium Enterprise Credit Guarantee Fund (SMEG)	
	UN	UN Global Compact (UNGC)	Publishing CSR reports for 3 consecutive years

C. Ethical management performance

- Designated as a Good Agency in the 2016 Public Transparency Assessment by the Anti-corruption and Civil Rights Commission (ACRC) for best practices in the Anti-corruption Infrastructure Implementation for 3 consecutive years
- Improved pubic awareness of KOTEC staff integrity and clean practices

A. Overview

KOTEC's customer satisfaction (CS) initiatives in 2016 included more customer-centered services, better CS capabilities for frontline employees, and intensive management in poor-service areas. As a result, it received a score of 89.3 out of 100 in the Public-service Customer Satisfaction Index(PCSI), as surveyed by the Ministry of Strategy and Finance.



B. Key Initiatives

- Improve customer-centered services
- Improve frontline staff's CS capabilities
- Identify poor-service areas and implement intensive remedial action
- Drive customer satisfaction based on VOC

C. CS Activities

- Customer Satisfaction Story Contest and Utilization  
Collect service satisfaction stories from clients, and internally and externally share/promote them to boost staff morale and KOTEC's public image
- CS Leader Sympathy Workshop  
Provide CS Leader Sympathy Workshops to 91 CS leaders from all branches to help them initiate CS activities and have them serve as the leads in CS management
- CS Off-site Training for Interns  
Provide CS off-site training for 50 branch interns based on the Kibo CS Manual, including training on basic manners and phone etiquette

### 03. Performance of Major Operations

● CS Clinic

Provide customized training for branches (27 branches in 1H, and 25 in 2H) that scored low in the CSI or volunteered for the Clinic to improve customer service

● CS education through CS Plaza

Provide educational material on poor CS areas and best CS practices from other institutions to encourage customer service-oriented thinking and CS practices

● Branch managers gathering direct feedback

Branch managers call 689 clients (or contacted in another way) to listen to their voices (VOC) to improve future service

● Focus Group Interview (FGI)

Conduct FGIs and seek opinions from 29 clients (9 from Gyeongnam, 10 from the Seoul Metropolitan Area, and 10 from Chungcheong) to improve the system

● VOC-based CS activities

Systematically analyze and managed VOCs received through various channels to improve the CS framework

● CS evaluation and reward

- Reward 12 CS Big Heroes of the Month
- Reward 2 Best CS Branches every quarter
- Reward 3 Best CRM Staff (at call centers)

#### D. CS Survey Results

Year	2013		2014		2015		2016	
Self-survey CS	1H	2H	1H	2H	1H	2H	1H	2H
	89.1	88.1	88.1	88.7	88.6	90.5	94.0	94.2
PCSI*	89.7		89.9		88.3		89.3	

\*Public service Customer Satisfaction Index

10  
Human Rights  
Management

#### A. Overview

At a time when demands for human rights protections at the workplace are growing globally, KOTEC has prepared a new framework of business management that meets such demands. This enables KOTEC to maintain its role as a leader in human rights management within the Korean public sector and to effectively respond to public voice.

#### B. Goals

- Promoting human rights management by establishing a human rights management framework
- Operating activities to improve human rights management through regular monitoring on it

#### C. Human Rights Management Progress

● Enacting the Charter of Human Rights Management

- Prepared the Charter of Human Rights Management based on advice from internal and external experts as well as interest groups, and established a new policy of human rights management at a Management Strategy Workshop

● Proclaiming human rights management as a core value and swearing by employees and executives for observation thereof

- Distributed a press release regarding the proclamation of human rights management policies and the policies were pledged by all employees/executives

● Enacting detailed regulations for human rights management

- Established internal guidelines to protect and promote the human rights of employees and executives

● Working-level consultation body and seminar

- Reviewed human rights management guidelines and checklists by hosting a working-level consultation seminar
- Participated in the NAP Conference of the National Human Rights Commission of Korea

## 03. Performance of Major Operations

### 11

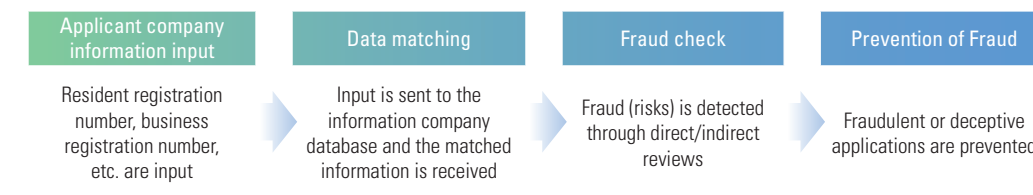
#### Risk Management

To effectively manage risks and liquidity of guarantee assets under the growing economic uncertainties at home and abroad, KOTEC established target risk rates based on its integrated risk management system, tightened the branch target management practices for each risk level, and put forth extensive effort to preemptively manage risk by strategically operating portfolios in accordance with government policies and technology finance directions.

KOTEC established Contingency Plans for each risk stage by utilizing integrated RCR and assets under management (AUM). This crisis response system allowed KOTEC to manage the total acquired risk within the target range, regardless of exceeding the annual guarantee target, ultimately contributing to the company's stable growth.

#### Implementation of the Fraud Warning System (FWS) to prevent fraudulent or deceptive applications

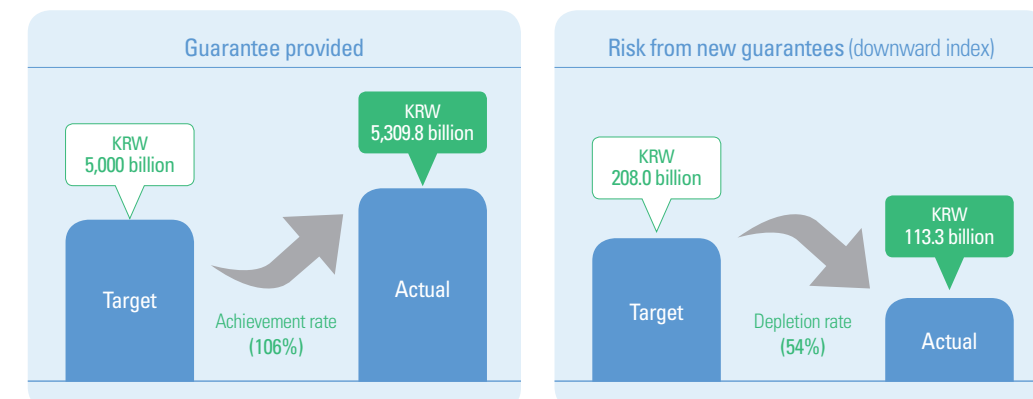
Amid the abolishment of the joint surety requirement and rapid increase of guarantee applications, it was imperative to screen fraudulent or deceptive applications efficiently with limited human resources. In response to the need, KOTEC implemented a Fraud Warning System (FWS) that allows users to look up and validate business registration information, CEO financial records (including bankruptcy history, excessive loans, etc.) to effectively manage fraud risk.



#### Preemptive risk management to enhance the quality of technology financing

By focusing on policy guarantees that have greater growth potential and larger economic repercussions, KOTEC sought to develop strong strategic and preemptive risk management solutions. These efforts resulted in KOTEC over-achieving on its guarantee provisions target. KOTEC also implemented a sophisticated risk management practice for branches, including differentiated risk management according to risk level and strategic portfolio operation.

#### Over-achievement of Guarantee and Risk Control Target by Systematic Risk Management



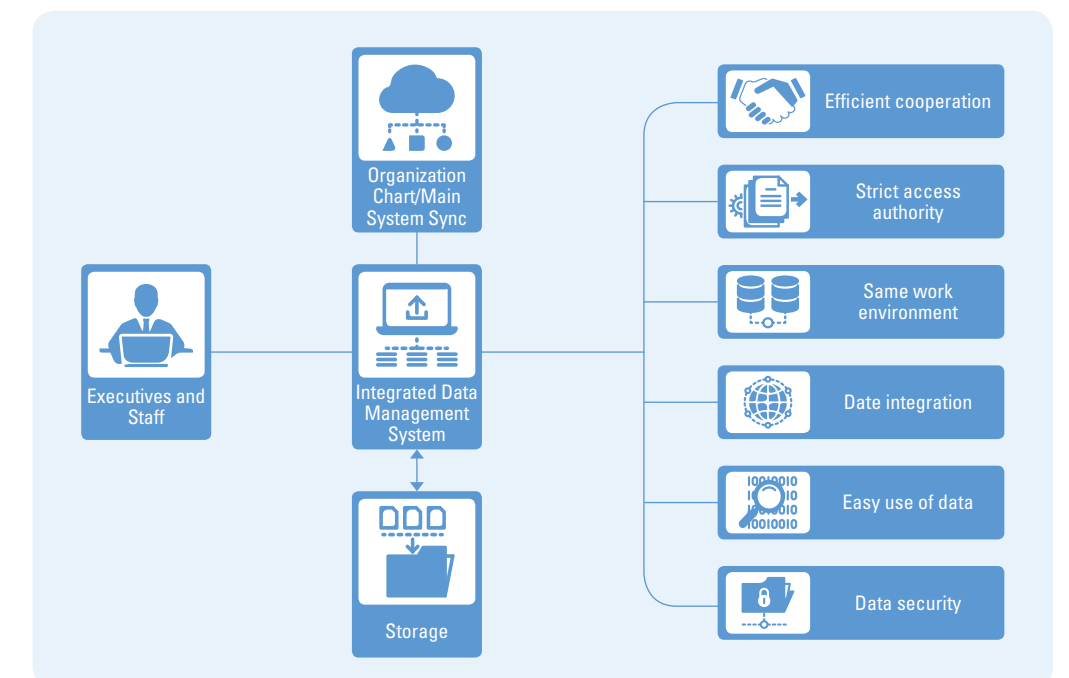
### 12

#### IT Operations & Management

#### A. Implementing an Integrated Data Management System

KOTEC implemented the Integrated Data Management System through which staff members can save and share work-related data within the centralized server rather than on their PCs. This has significantly improved information sharing convenience, cooperation efficiency and data security.

#### Composition of Integrated Data Management System



#### B. Upgrading the Network Equipment of All Branches

KOTEC upgraded old branch network equipments with high-performing ones. This increased processing speed by 4.5 times and, accordingly, improved work productivity to a great extent. It also enabled remote monitoring of branch network equipments to prevent network-triggered disruptions.

#### \* Network equipment (Switch equipment)

Equipment that connects PCs in branches and enables communications between/across equipments



03. Performance of Major Operations

Before and After Network Equipment Replacement

Equipment	Before	After	Effect
Switch capa.	32Gbps	176Gbps	4.5 times faster
Dual Power Supply	Single supply	Dual supply	Stable power supply
Monitoring	Unable to check equipment status	Able to check equipment status	Pre-detection of potential failure

C. Implementing the CoWork Kibo System for Technology Valuation

KOTEC implemented the CoWork Kibo System for Technology Valuation, which moves the entire process of technology valuation online.

As technology valuation is, by nature, conducted in cooperation with external advisers, it required a significant amount of time to collect valuation materials and opinions and coordinate them when the procedure was done offline. The new CoWork Kibo System, however, enables every step of the procedure to be conducted online, from making the request to sharing documents to submitting reports to communicating. This has substantially saved time and effort while improving the quality of the valuation reports.

Before and After CoWork Kibo System

Process	Before	After
Appraisal Application	Offline application and submission	Online application and submission of documents online
Request for External adviser support	Send requests for participation or materials via phone or email	Everything is done online(from sending requests and materials to designating appraisers)
Due Diligence Scheduling	Phone or email notification	Automatic notification by SMS and /or email when the appraisers are designated
Appraisal report	External advisers draft a report and submit it to each relevant officer.	Real-time submission of standardized reports

D. Implementing Integrated Internal Audit System

To improve the efficiency of internal audits, KOTEC implemented an Integrated Internal Audit System that combines the administrative work of the audit with risk-based regular monitoring. This improved the overall process of the internal audit and established a monitoring system for audits based on risk management scenarios, reducing violations of work regulations.

E. Performance of IT Operations

KOTEC was recognized by external evaluations for its excellent information security and IT operation practices in 2016.

Evaluation	Conducted by	KOTEC	Note
Evaluation of information security management practices	NIS*	4th (among 31 institutions)	6th in 2015
Diagnosis of personal information protection practices of public agencies	MOI**	95.08 / 100	Average of public agencies: 83.45
Maturity of Information Resource Management (Enterprise Architecture, EA)	MOI	4.06 / 5.0	Average of public agencies: 2.70

\*NIS: National Intelligence Service Korea  
\*\*MOI: Ministry of the Interior



A. Overview

KOTEC shares social responsibilities between and among all executives and staff, and fulfills its social responsibilities by supporting underprivileged and socially vulnerable people. KOTEC leads the way in socially responsible management practice and builds sustainable management grounds by implementing socially responsible management activities.

B. Major Performance

KOTEC's 2016 social contribution activities focused on social programs developed in line with its foundation goals and business model. Its activities also focused on regional communities by increasing cooperation with relevant local institutions. In addition, KOTEC developed and improved existing CSR programs, and encourage staff participation, growing the number of volunteers and volunteer hours.

CSR Vision	Becoming a model public corporation that grows with the local community based on core business-related CSR activities		
Directions	Core business-related CSR	Participating CSR	Greater contributions to the local community
Action Plans	<ul style="list-style-type: none"><li>Donating education personalized to enterprise life cycles</li><li>Industry-academia cooperation program</li><li>Support system for free selection of training</li></ul>	<ul style="list-style-type: none"><li>CSR idea contest</li><li>Increasing staff members participation programs</li><li>Developing CSR activities in cooperation with other public corporations</li></ul>	<ul style="list-style-type: none"><li>Promoting urban-rural shared growth (1 Company, 3 sister villages)</li><li>Vocational training for local/ underprivileged people</li><li>Cultural experience events for the underprivileged</li></ul>

## 03. Performance of Major Operations



Youth Technology Startup Class



Soup Kitchen for Gamman Social Welfare Center



Special Lecture for Successful Startup Preparation for College Students



Opening of Science and Technology Experience Center (HQ) for the Public

### C. Major Activities

#### Promoting personalized CSR programs related to KOTEC's core businesses

Type	Program	Details
Pre-startup	Kibo Venture Startup Class	· Helping pre-entrepreneurs (equipped with technology and ideas) to successfully launch tech companies
Startup	Youth Technology Startup Class	· Practical training program that helps young pre-entrepreneurs to commercially realize their creative ideas
	Free Counseling, Assessment, Evaluation and Consulting	· Supporting technology startups with free technology consulting and assessment · Providing free technology/management consulting for distressed businesses
Growth	Professional Class for Growing Enterprise CEOs	· Professional class to help technology startups of 3-5 years
Restart	Specialized Class for Restarting CEOs	· Providing practical knowledge on business management to help and encourage CEOs of failed business re-enter the industry

#### Encouraging staff members participation in CSR programs and activities through the CSR Idea Contest

Program	Details
CSR Idea Contest	· Sharing responsibilities among staff for CSR · Motivating staff by adopting their ideas into CSR activities
Kibo Walking Together Sharing Love Campaign	· Encouraging participation through Bigwalk (smartphone app for donations) · Donating to vocational training programs for the disabled and underprivileged when staff meet their walking goals (validated through Bigwalk)
Kibo Coal Bank Sharing Love Campaign	· Expanding the branch-level activities to regional HQ level · Encouraging staff participation through region-based CSR activities
Talent Donation Volunteer Activities	· Donating talent to Awoo Doll Making (by Doll Making Club members in KOTEC) · Raising funds through a 1:1 matching grant of management-labor co-contribution

#### Expanding CSR Activities for Local Community and the Underprivileged

Type	Program	Details
Contribution to the Local Community	1 Company 3 Sister Villages Co-growth Friendly Exchange	· Volunteer activities at the farms of the sister villages · Purchase of the village products (to contribute to their income) · Ongoing support for living-alone seniors and students from low-income families in the villages
	Vocational Training for Disabled and Underprivileged	· Confectionary/baking training for the disabled and/or underprivileged (in cooperation with local social welfare centers)
	Science and Technology Experience Center, Science Experience Class	· Opening KOTEC's Science and Technology Experience Center to the public and providing education · Science programs, including 4D cinema, robot demonstration etc.
Support for the Underprivileged	5 Sense Satisfaction Cultural Experience Event	· Co-participating events for KOTEC staff and children of underprivileged or SME employees' families (who have little access to cultural experience) · Cultural activities, including 4D movie, concert/performance, tracking etc.
	Volunteer Activities for Local Social Welfare Centers	· Soup kitchen for underprivileged senior citizens · Friends to senior citizens with Alzheimer's, Hangul teaching class, housing improvement etc.
	Fund Raising	· Participating in social fundraising events to fulfill KOTEC's social responsibilities · Community Chest of Korea, Red Cross Bazaar, Christmas seal, fund for the military, Korea Red Cross, Regular sponsorship for the Children Foundation etc.



Volunteering in farming village



Co-sponsoring, with the Labor Union, school uniforms and supplies for Children from low-income families



03. Performance of Major Operations

14  
Global Exchange  
& Cooperation

KOTEC has worked to actively promote the excellence of KTRS and to support the globalization of technology financing by utilizing its extensive network with overseas institutions and by driving human resource and information exchanges with them.

Through an active participation into the government-led initiative, Knowledge Sharing Program (KSP), KOTEC has transferred KTRS to Vietnam and Thailand, and helped them build up their technology financing capabilities, contributing to the creation of a “Korean Wave” (known also as Hallyu) in financing. In addition, KOTEC helps Korean SMEs with global technology transfers and overseas market penetration in cooperation with international organizations such as WIPO Green and CTCN.

Overseas institutions are already paying keen attention to KOTEC’s well-established KTRS and are actively visiting KOTEC to gain insight on KTRS. KOTEC will continue to broaden and deepen its work in international exchanges and cooperation to globally promote KTRS as a best practice and truly become a Global Technology Finance Leader.

A. Major Achievements



Visited by the Senior Minister of National Population and Talent Division (NPTD) of Singapore



Visited by the delegation of Zhongguancun Z-Park Smart Environmental Industry Alliance



Visited by Fondo de Garantía para Prestamos a la Pequena Industria (FOGAPI) of Peru for training



Discussions to develop technology innovation enterprises with Deputy Minister of Economic Affairs of the Netherlands



Signed an MOU with National Technology Innovation Fund (NATIF) of Vietnam



Knowledge exchange workshop with Japan Finance Corporation (JFC)

B. Global Exchange Activities

Overseas Institutions that Have Visited KOTEC During the Year

Month	Institution	Exchange Details
Mar.	National Population and Talent Division of Singapore	Introduction of KOTEC’s work-life balance and discussions on cooperation
Apr.	Delegation of Zhongguancun Z-Park Smart Environmental Industry Alliance	Institution introduction and discussions on future cooperation
Jun.	FOGAPI(Small Business Laon Guarantee Fund Foundation) of Peru	Introduction of the technology finance system
Aug.	Ministry of Finance, Thailand	Introduction of the technology finance system
Sep.	Netherlands Enterprise Agency (RVO)	Institution introduction and discussions on future cooperation
Sep.	Small and Medium Enterprise Credit Guarantee Fund (SMEG) of Taiwan	Workshop on the technology finance system
Oct.	Thai Credit Guarantee Corporation (TCG)	Introduction of the technology appraisal and technology finance system
Dec.	Japan Finance Corporation (JFC)	Workshop on the technology finance system

KOTEC Participation in International Conferences

Month	Conference	Exchange Details
Jan.	Convention invited by Singapore Business Federation (SBF)	Supporting SMEs through KTRS
Apr.	Technology Transfer Pilot Project of WIPO GREEN	Facilitating technology transfers from Korean SMEs to overseas companies
May	Annual Conference of Asia Development Bank (ADB)	Expanding exchanges between Asian financial institutions
Jun.	Annual Conference of AECM	Expanding exchanges with European guarantee institutions
Jul.	The 26th ACSIC Training Program	Working-level meeting between Asian credit guarantee institutions
Oct.	Annual Conference of IMF-WB	Increasing exchanges with global financial institutions
Oct.	General Summit of Ibero America	Exchanges with guarantee institutions in Southern Europe and Latin America
Nov.	The 29th ACSIC Annual Conference	Increasing exchanges between Asian financial institutions
Nov.	Annual Conference of WIPO GREEN	Expanding exchanges with global institutions engaging in technology transfer



# APPENDIX





## 01

## Financial Position Statement

## 1. Summary of Statement of Financial Position 2016

As of December 31, 2016

Unit: KRW million

Assets		Liabilities and Net Assets	
Item	Amount	Item	Amount
<b>I . Current Assets</b>	<b>2,180,237</b>	<b>I . Current Liabilities</b>	<b>157,213</b>
Cash and Cash Equivalents	11,004	Deferred Revenue	139,812
Short-term Financial Instruments	996,638	Others	17,401
Short-term Investment Securities	1,107,844	<b>II . Long-term Liabilities</b>	<b>989,733</b>
Other current assets	64,751	Reserves for Subrogation	923,421
<b>II . Investment Assets</b>	<b>625,953</b>	Reserves for P-CBO Guarantee Subrogation	40,199
Long-term Financial Instruments	101,000	Accrued Liability for Retirement Allowance	26,113
Long-term Investment Securities	326,713	<b>III . Other Non-Current Liabilities</b>	<b>1,483</b>
Other Investment assets	198,240	<b>Total Liabilities</b>	<b>1,148,429</b>
<b>III . Tangible Properties</b>	<b>133,290</b>		
Land	42,924	<b>I . Basic Net Assets</b>	<b>10,360,891</b>
Buildings	83,655	Fundamental Property at the Time of Foundation	21,768
Machinery	2,903	Contributions	10,339,123
Furniture, fixtures, and transport equipment etc.	3,808	<b>II . Accumulated Reserves and Surpluses</b>	<b>(8,240,981)</b>
<b>IV . Intangible Properties</b>	<b>3,421</b>	Retained Earning Carried Over from the Previous Year	(8,161,404)
Industrial Property Rights	3,421	Other Changes in Net Assets	80,000
<b>V . Other Non-Current Asset</b>	<b>407,865</b>	Financial Operation Results	(159,577)
Indemnity Rights	337,211	<b>III . Net Asset Adjustment</b>	<b>82,427</b>
Preservation Rights	236	Gain and Loss on Investment Valuation	82,427
Deposits and others	70,418	<b>Total Net Assets</b>	<b>2,202,337</b>
<b>Total Assets</b>	<b>3,350,766</b>	<b>Total Liabilities and Net Assets</b>	<b>3,350,766</b>

## 2. Summary of Statement of Financial Operations 2016

From January 1 to December 31, 2016

Unit: KRW million

Item	Amount		
	Total Cost	Income	Net Cost
<b>I . Program Net Cost</b>	<b>925,190</b>	<b>(282,193)</b>	<b>642,997</b>
Industrial Financial Support	925,190	(282,193)	642,997
<b>II . Management Cost</b>			<b>49,012</b>
Labor Cost			24,489
Expenses, other			24,523
<b>III . Non Allocated Expenses</b>			<b>53,357</b>
Asset Impairment Loss and others			53,357
<b>IV . Non Allocated Income</b>			<b>65,017</b>
Interest income and others			65,017
<b>V . Net Operation Cost ( I + II + III - IV )</b>			<b>680,349</b>
<b>VI . Non Exchange Revenue</b>			<b>520,772</b>
Contribution Revenue			478,375
Other Sourcing and Transfer			42,397
<b>Operation Result (= V - VI)</b>			<b>159,577</b>

## 3. Summary of 2016 Statement of Changes in Net Assets

From January 1 to December 31, 2016

Unit: KRW million

Item	Amount			
	Net Asset	Accumulated Reserve and Surplus	Net Asset Adjustment	Total
<b>I . Basic Net Asset</b>	<b>10,360,891</b>	<b>(8,161,404)</b>	<b>95,610</b>	<b>2,295,097</b>
Reported Amount	10,360,891	(8,161,404)	95,610	2,295,097
<b>II . Statement of Operation</b>	<b>-</b>	<b>159,577</b>	<b>-</b>	<b>159,577</b>
<b>III . Adjustment Accounts</b>	<b>-</b>	<b>80,000</b>	<b>(13,183)</b>	<b>66,817</b>
Gain and Loss on Investment Securities Valuation	-	-	(14,607)	(14,607)
Gain on Asset Revaluation	-	-	1,424	1,424
Other Gain and Loss on Net Asset	-	80,000	-	80,000
<b>IV . Ending Balance of Net Asset ( I - II + III )</b>	<b>10,360,891</b>	<b>(8,240,981)</b>	<b>82,427</b>	<b>2,202,337</b>

## 02

## Board of Directors

Executive  
Directors

**Kwag Young-cheol**  
Executive Director

**Park Ki-pyo**  
Executive Director

**Kang Rack-kyu**  
Executive Vice President

**Kim Kyu-ok**  
Chairman and President



**Choi Sung-soo**  
Chief Audit Executive

**Hwang Dae-hyun**  
Executive Director

**Yoo Ki-hyeon**  
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



**Kim Tae-young**  
Non-Executive Director



**Lee Dae-sik**  
Non-Executive Director



**Lee Ji-eon**  
Non-Executive Director



03

Board of Policy (BOP)

Members of the KOTEC BOP					
* BOP established based on the Korea Technology Finance Corporation Act, Article 17 December 2016					
Type		Position			Note
Chair		Chairman and President of KOTEC			
Appointed Members (5)	Appointed by the Finance Services Commission (1)	FSC	Director General	Do Gyu-sang	
	Appointed by the Minister of Strategy and Finance (1)	MOSF	Director General	Bang Ki-seon	
	Appointed by the Administrator of Small and Medium Business Administration (1)	SMBA	Director General	Lee Sang-hoon	
	Appointed by the Chairman and CEO of Industrial Bank of Korea (1)	IBK	Executive Vice President	Park Choon-hong	
	Appointed by the Chairman and CEO of Kookmin Bank (1)	KB	Executive Vice President	Lee Yong-deok	
Commissioned members (7)	Commissioned by the FSC among executives or executive management of financial institutions (3)	Shinhan Bank	Executive Vice President	Choi Byeong-hwa	
		Woori Bank	Executive Vice President	Chae Woo-seok	
		KEB Hana Bank	Executive Vice President	Yoon Gyu-seon	
	Commissioned by the chairman of Korea Chamber of Commerce and Industry (1)	KCCI	Executive Vice Chairman	Lee Dong-geun	
	Commissioned by the Chairman of Korea Federation of SMEs (1)	KBIZ	Executive Vice Chairman	Song Jae-hee	
	Commissioned among technology experts by the FSC with consultation from the Minister of Science and ICT (2)	Korea Industrial Technology Association	Executive Deputy Chairman	Kim Eui-Hwan	
					Vacant

04

2016 Highlights

Date	Highlights
Jan. 26	Hosted the 1st Management Strategy Workshop
Jan. 27	Implemented exemption from joint security for startups
Feb. 17	Co-sponsored with the Labor Union, students of low-income families
Mar. 3	Co-hosted with the Korea Atomic Energy Research Institute (KAERI), the Technology Transfer Seminar
Mar. 8	Hosted the 1st Technology Credit Appraiser Test (Level 3)
Mar. 14	Opened the Osan Office
Mar. 21	Hosted the 1st Youth Technology Startup Class
Apr. 1	Celebrated the company's 27th anniversary
Apr. 8	Provide support in collaboration with KIC-Europe, for the globalization of tech SMEs
May. 17	Opened the Pangyo Office
May. 24	Launched the Future Business Task Force
May. 30	Selected the 8 K-Star Venture Businesses
Jun. 1	Provided KRW 320 billion for excellent cultural contents firms
Jun. 24	Provided in partnership with the Busan municipal government, a One-Stop Agreement Guarantee of KRW 100 billion
Jul. 5	Signed an MOU with the Korea Asset Management Corporation (KAMCO) to support distressed SMEs
Jul. 19	Established the Gyeonggi and Gwangju Technology Convergence Centers
Jul. 26	Hosted the 2nd Management Strategy Workshop
Aug. 19	Became the first financial institute in Korea to be accredited as a CTCN expert
Aug. 25	Opened the Jeju Office
Aug. 31	Transferred technology finance know-how to the Ministry of Science and Technology of Vietnam
Sep. 30	Name officially changed to "Korea Technology Finance Corporation"
Oct. 25	Received the Presidential Award for contributions to technology finance development
Nov. 11	Hosted the Technology Appraisal Seminar
Dec. 1	Hired 40 new employees
Dec. 8	Signed an MOU with all KIC centers for the global advancement of tech SMEs
Dec. 15	Transferred Korean climate technology to Africa
Dec. 19	Signed an MOU with the Japan Finance Corporation (JFC)

05

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, Dunsanse-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, Digital-ro 26gil 105, 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, Dunsanse-ro, Seo-gu, Daejeon	042)610-2201
Daejeon-Dong Technology Appraisal Center	2nd Fl., Yuanta Securities, 540, Daejong-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
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., XIUS 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, Bangbae-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

Center	Address	Tel
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
Yangsang 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
Uiyeongbu Technology Appraisal Center	4th Fl., Seokcheon B/D, 44, Uigeong-ro, Uiyeongbu-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., Songdocentroad 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, Gwangju-gang-ro, Seobuk-gu, Cheonan-si, Chungcheongnam-do	041)629-5913
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, Pyeongtake-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
Gyeonggi Technology Convergence Center	6th Fl., 19, Hyowon-ro 307beon-gil, Paldal-gu, Suwon-si, Gyeonggi-do	031)8006-1581
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
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Seoul Technology Convergence Center	11th Fl., Living Tower of Highbrand B/D, 16, Maeheon-ro, Seocho-gu, Seoul	02)2155-3652
Gunsan Office of Iksan Technology Appraisal Center	2nd Fl., Kyobo B/D, 35, Daehak-ro, Gunsan-si, Jeollabuk-do	063)460-2840
Ochang Office of Cheongju Technology Appraisal Center	Rm 301, Future Convergence Technology Tower of Chungbuk Technopark, 76, Research Complex Road, Cheongwon-gu, Cheongju-si, Chungcheonggbuk-do	043)251-1503
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Pangyo Office of Seongnam Technology Appraisal Center	2nd Fl., KSIA B/D, 182, Pangyoyeok-ro, Bundang-gu, Seongnam-si, Gyeonggi-do	031)725-7805
Jeju Office of Gwangju Technology Appraisal Center	3rd Fl., Small and Medium Business Support Center, 473, Yeonsam-ro, Jeju-si, Jeju	064)727-0271
Seoul Cultural Content Finance Center	41th Fl., 63 B/D, 50, 63-ro, Yeongdeungpo-gu, Seoul	02)3215-5971
Gyeonggi Cultural Content Finance Center	5th Fl., KSIA, 182, Pangyoyeok-ro, Bundang-gu, Seongnam-si, Gyeonggi-do	031)725-7857



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