

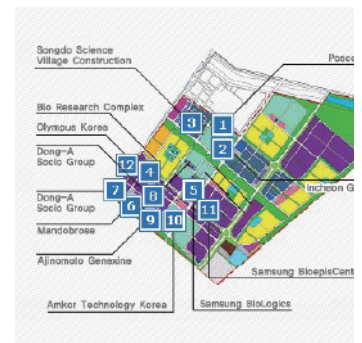
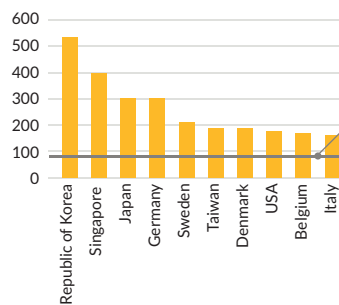
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Man and Machine



MOVING TOWARDS A SMARTER WORLD

With its unrivaled expertise in mechatronics, Stäubli Korea is more than ready to usher in the Fourth Industrial Revolution



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Dear Readers,

It is my privilege and pleasure to invite you to Invest Korea Week (IKW) 2017, to be held on November 7-9 in Seoul.

First introduced in 2006, IKW (formerly known as Foreign Investment Week) celebrates its 13th anniversary and proudly stands as Korea's largest international investment promotion

event. This three-day event brings together key players from across the globe and serves as a platform for participants to share insights on Korea's investment environment.

Under this year's theme, 'Foreign investment's impact on job creation and the Fourth Industrial Revolution', IKW will provide information on new investment opportunities amid the rapid pace of industrial transformation.

By converging its manufacturing industry and information technology, Korea is revolutionizing the industrial landscape. Against this backdrop, IKW 2017 will help investors find ideal Korean partners to strengthen their business cooperation. We are also proud to announce IKW's first-ever job fair, which will link promising Korean talent to foreign businesses, including a number of Fortune 500 companies. Along with the job fair, participants can also enjoy investment conferences, pitching seminars by startups, site visits and networking events.

But that's not all Invest KOREA has in store. Later this month, IK will be hosting its biannual Get to Know Korea program in PyeongChang, the host city of the 2018 Winter Olympics. We invite foreign investors and their family members to be a part of this cultural event, as they will get an exclusive tour of the Olympic venues. It will also be a time for us to learn more about PyeongChang's vibrant investment and living environment.

I thus ask for your continued interest in IK's activities and look forward to seeing you in November.

Sincerely,

A handwritten signature in black ink, appearing to read 'Yong Kook Kim'.

Yong Kook Kim
Head of Invest KOREA

Past Events

KOREAN PAVILION AT ASTANA EXPO CLOSES AFTER HOSTING 550,000 VISITORS

On September 10, the Korean Pavilion at the Astana Expo drew to a close after 93 days of exhibition. Under the theme of Future Energy, the event convened a total of 115 countries and 22 international organizations in the Kazakhstan capital.

The Korean Pavilion was one of the most popular destinations in the exhibition, attracting nearly 550,000 visitors. Such popularity was attributable to the country's latest technological achievements that appealed to the public.

The Pavilion hosted various cultural

events to promote Korean culture in the local market and contributed to the Korean Wave spreading throughout the region. Jaehong Kim, president and CEO of the Korea Trade-Investment Promotion Agency (KOTRA), said that Korea successfully presented to the world its leading-edge technologies and shared its future vision for energy. "Building on the achievements of the Korean Pavilion, KOTRA will continue to support Korean companies in entering promising CIS markets like Kazakhstan."

KOTRA HOLDS JOB FAIR FOR INTERNATIONAL STUDENTS

From September 13 to 14, KOTRA held the 2017 Job Fair for International Students in Seoul's Coex. 129 Korean companies and 2,500 foreign students participated in the event, which served as venue linking Korea's small and medium-enterprises (SMEs) with promising international students currently studying in Korea. The job fair was comprised of one-on-one job interviews, lectures by foreign employees and resume consulta-

tion sessions.

"Foreign students and international jobseekers here in Korea are serving as important mediators between Korea and other countries," said Kim Dooyoung, vice president of KOTRA's strategic marketing division. "As such, we expect that Korean startups and SMEs will become more competitive on the global stage if they hire promising international talent."

INVEST KOREA WELCOMES NEW TENANT INTO ITS BUSINESS INCUBATION CENTER

To help tenants of Invest Korea Plaza (IKP) feel more welcome, Invest KOREA (IK), held 'Refresh Day' on September 27. IK staff passed out snacks and booklets on the latest trends taking place in Korea to help foreign tenants get a better understanding of the country. In addition, IKP welcomed its newest foreign tenant, DoggyMan, a Japanese manufacturer and distributor of pet supply products.

IK is the foreign investment promotion arm of KOTRA, and IKP is the first busi-

ness incubation complex in Korea for foreign investors. As part of efforts to improve the environment for foreign investment in the country, IKP offers furnished offices and on-site comprehensive services to tenants. Through its Investment Consulting Center, IK also provides support for business registration, taxation consulting, visa issuance and credit card issuance, among others. Such services are available in English, Japanese and Chinese.

Upcoming Events

GLOBAL FRANCHISE BUSINESS PLAZA 2017

From October 12 to 13, KOTRA and the Small Enterprise and Market Service (SEMAS) will hold the Global Franchise Business Plaza (GFBP) 2017, an event for Korean franchises wanting to enter the global market. Hosted by the Ministry of Trade, Industry and Energy (MOTIE) and the Ministry of SMEs and

Startups (MSS), the event will be comprised of one-on-one export consultation sessions, a business forum, a contract /MOU signing ceremony and a tour of franchised stores. Most notably, the forum will gather top minds from relevant sectors who will share their business strategies.

JOB FAIR FOR FOREIGN-INVESTED COMPANIES 2017

The Job Fair for Foreign-Invested Companies 2017 will be held in COEX, Seoul from October 12 to 13 to promote foreign-invested companies in Korea, help them hire premier talent and ultimately boost national employment. The two-day event hosted by MOTIE and organized by KOTRA celebrates its 12th anniversary this year. Keeping up with

the new administration's job creation policy schemes, this year's event will gather the largest number of participants ever. The job fair will house pavilions for recruiting seminars and CSR promotion activities. 120 foreign-invested firms and 14,000 job seekers will take part in the event.

Trade News

SOUTH KOREAN PRIME MINISTER AND WISCONSIN GOVERNOR DISCUSS FTA

South Korean Prime Minister Lee Nak-yeon met with the governor of the U.S. state of Wisconsin on September 15 and discussed trade and economic cooperation, including the free trade pact between the two countries.

Gov. Scott Walker visited South Korea with an economic mission of about 20 people that included government officials and business leaders in the state. It was his first visit to the country.

During the meeting, Lee noted the steady development of cooperative relations in trade and other areas between South Korea and Wisconsin. Lee also asked for Walker's support for the free trade agreement between the two coun-

tries, saying the deal has been beneficial to both nations.

Walker said that South Korea is Wisconsin's eight-largest trade partner and expressed the hope that his visit will help further deepen cooperation not only in the manufacturing and agricultural sectors but also in the cultural and educational fields.

The governor also said that trade between South Korea and Wisconsin has been on the rise since the FTA went into effect in 2012. He added that Wisconsin has benefited a lot from the agreement and will try to use the trade pact to move relations between the two countries further forward.

ASIAN & EUROPEAN MINISTERS DISCUSS TRADE ISSUES IN SEOUL

On September 21, economic leaders of Asia and Europe gathered in Seoul for the Asia- Europe Meeting (ASEM) to discuss ways to tackle the rising protectionism in trade and to cooperate for the next industrial revolution. This was the first ministerial meeting to take place in 12 years.

Under the theme, "Reconnecting Asia-Europe: Innovative Partnership for Inclusive Prosperity," the meeting provided an opportunity for Asia and Europe to discuss ways to promote trade and

investment, as well as to come up with joint responses to rising protectionism.

Trade has been a major driver for economic growth in ASEM partners, the Ministry of Trade, Industry and Energy (MOTIE) said, noting ASEM's share of global trade increased from 54 percent in 1995 to 64 percent in 2015.

The policymakers also touched on the Fourth Industrial Revolution and the new climate framework under the Paris Agreement aimed at reducing carbon emissions.

Government & Policy

S.KOREA'S FINANCE MINISTER MEETS WITH MOODY'S LEADERSHIP

In a meeting with Moody's officials, South Korea's top economic policymaker said that rising geopolitical tensions sparked by North Korea are having a limited impact on Asia's fourth-largest economy, and the Seoul government is ready to cope with possible risks.

Finance Minister Kim Dong-yeon made the comment in a meeting with Richard Cantor, chief risk officer of Moody's Corp., and Robert Fauber, president of Moody's Investors Service, held in New York on September 19 (U.S.

time).

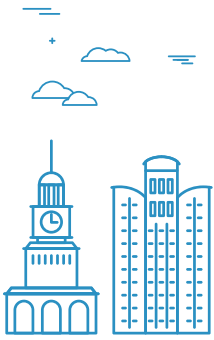
Kim said Seoul has a system in place to take appropriate and timely measures and is in close policy coordination with the U.S., as well as Japan, China and other nations.

Despite heightened tensions, Moody's said in its latest report that the possibility of military conflict on the Korean Peninsula is still very low and will likely not trigger a sudden outflow of foreign capital from the South Korean market in the short-term.

MOON MEETS WITH IMF CHIEF, STRESSES IMPORTANCE OF INCOME-LED GROWTH

On September 11, South Korean President Moon Jae-in outlined his economic policy during a meeting with International Monetary Fund (IMF) Managing Director Christine Lagarde. Moon stated that his government's income-led growth policy is in line with the IMF's call for a balance between domestic demand and exports. Moon also asked the IMF to make policy recommendations and expand research so as to help realize inclusive growth.

Lagarde said that economic growth is further strengthened and becomes more sustainable when its benefits are widely shared. She also praised Seoul's policy for conforming to the kind of inclusive growth that the lending agency has called for. She said that the South's policy is expected to lower entrance barriers for promising new startups while preventing excessive market dominance by conglomerates, which will improve productivity and contribute to inclusive growth.



What does a rise in property tax mean for Korea?

On September 4, Choo Mi-ae, the chairwoman of the ruling Democratic party, addressed the theory of the land value tax propagated by the late American Henry George, one of the greatest thinkers and journalists back in the 19th century. He suggested a government tax that would absorb the increase in the value of land because such an increase was purely 'natural' and was a burden that must be shared by the entire community. By so doing, he argued that the revenues can be used to invest in education and infrastructure without the need for raising income tax or corporate tax.

The reason Choo quoted Henry George at the congressional opening session was very clear: she wanted to introduce a tax on properties, namely tax on land and housing. She emphatically stated that a new tax system on properties (also known as Rent Reform 2017), will reinvigorate Korea. Her speech brought huge backlash not just in the political arena but in the public sphere, as it means increased tax for almost everybody who owns a house or land. One opposition party called this system to be obstructive, and another denounced it as going against the wind of the market. Considering that the legislation in the National Assembly cannot be carried out without the consent of the opposition parties, there are many questions to be answered before making a judgment on the desirability of the property tax.

First, there is the question of whether it is fair. It would be unfair to levy the tax for property that has hardly changed over the years. From 2000, the average price of housing rose by 1.98 times, while GDP (in KRW) increased by 2.84 times and workers compensation by 2.82 times. Even per capita GDP rose by 2.58-fold. So it's hard to argue that the price of housing has risen to the level of speculation for the last cou-

ple of decades. Of course there are some cases where prices have gone up dramatically now and then, but that doesn't mean that the entire housing market is subject to this rapid rise.

The second and potentially stifling problem is the possibility of tax resistance. Income tax for the rich and corporate tax for chaebols have already been raised substantially by this government. In 2016, people are paying about KRW 10 trillion (USD 8.85 billion) for property taxes. Either these people have to pay significantly more or there needs to be new taxpayers that will pay for the increased property tax.

The third problem is whether the imposition of property tax will lower the recent hike in property prices. Of course that depends on the scale of property tax; namely, how much property tax rate will be raised. Currently, those with houses worth USD 1 million pay about USD 1,900 a year for property tax. The tax rate stands at 0.5 percent, but there is a basic deduction of USD 522,000 and an additional 20 percent (USD 200,000) of value deduction. So, the effective tax rate on a USD 1 million house is a mere 0.19 percent. Now, if the government wants to double or triple the effective tax rate, a tax amounting to an additional couple thousand dollars wouldn't cause people to sell their homes. It's hard to believe that doubling property tax would render a significant fall in housing prices. If there really are many people willing to sell their homes because of higher property tax, it is natural to believe that there are equally just as many people not willing to buy houses because of higher tax. If this is the case, then there won't be significant changes in housing prices.

The fourth problem with property tax is the transfer of higher tax on the tenants. Most landlords will pass higher property

tax on to their tenants by raising the rent, so it will not be the land owners but the renters who are levied by the tax.

The last issue is related to the congressional landscape. The ruling party's seat (120 out 300) currently occupies no more than 40 percent, and the congressional procedure requires at least 60 percent assent approval for balloting a bill on the floor; thus, any proposed property tax bill has little chance to even make it to the ballot with the consent of the opposition party.

When Henry George advocated the Land/Location Value Tax (LVT) in the 1860s, land prices were rapidly rising due to huge westward migration and discoveries of gold and silver mines all across the US. Railways, canals and highways were being built on the vast uninhabited area. In those years, most land owners were able to receive incredibly high land rent, and George's idea of LVT on their profits were more than just and fair to most Americans. But now, especially in Korea, the housing market is totally different. The recent housing market boom since 2015 was mainly due to extremely low interest rates and government stimulation policies. Under the previous government, the base rate of the Bank of Korea was lowered five times from 2.75 percent to 1.25 percent. In addition to that, the central bank has poured trillions of won following a quantitative easing policy. So, for the purpose of normalizing house prices, it is essential to make interest rates return to normal levels, which is believed to be 2 percentage points higher than the current level.

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** The opinions expressed in his article are the author's own and do not reflect the views of KOTRA*



Compared to more traditional industries, the mobile industry has a rather short history, spanning less than forty years. But despite being a relatively newer sector, it's no doubt the most revolutionary. As such, the South Korean government, along with KOTRA, is doing their part to continue to accelerate this revolution, especially as the world is preparing to usher in the much-talked-about industrial revolution.

Global Mobile Vision (GMV) 2017 is just one of the ways that KOTRA is sparking discussion on the latest technological trends taking place in the mobile and ICT industry. Held from September 13 to 15, this year's GMV took place at KINTEX in the South Korean city of Goyang. Under the theme 'Mobile meets intelligence,' the event took a closer look at what the private and public sectors are doing to respond to the Fourth Industrial Revolution.

Now in its 10th year, GMV 2017 was comprised of various programs, including an exhibition, one-on-one meetings, MOU signings and seminars for Korean companies seeking to enter the overseas market. A total of eight MOUs worth USD 2 million were signed between Korean and foreign companies specializing in IT, artificial intelligence and virtual reality. Participants also had a chance to learn more about Korea's latest 5G technological trends at the GMV Conference, which invited experts from some of the world's leading telecommunications companies, including

Global Mobile Vision sparks discussion on latest trends in Korea's revolutionary mobile and ICT industry

KT Corporation, Qualcomm, Naver, Ericsson-LG and Sabre, among others.

According to experts at the conference, if 4G technology was about connecting people faster, 5G goes well beyond that. "Only 5G technology can accelerate the Fourth Industrial Revolution," said Won Yeol Lee, director of KT Corporation, South Korea's largest telephone company. "In 2018, Korea will launch its 5G service at the PyeongChang Winter Olympics, which is the perfect opportunity to showcase Korea's innovative technologies to the international community."

But 5G won't just change how we interact with technology; it's also going to change the landscape of the entire world economy. "In 2035, the global 5G value chain will generate USD 3.5 trillion in gross output and 22 million jobs—that's more than number of people living in Beijing," said an official at Qualcomm. "From 2020 to 2035, 5G will also boost real global GDP growth by USD 3 trillion and more specifically, it will enable USD



2.4 trillion in economic output across the broader automotive sector."

"The global demand for smart factories, AI and IoT continues to increase by the day," said Kim Dooyoung, vice president of KOTRA's strategic business division. Kim added that KOTRA will continue to work closely with promising Korean ICT companies and match them with overseas business partners to further advance the mobile industry.

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The Latest on Korea's Investment Environment



Smart Textronics Research Center Opens in Ansan

On September 6, the new Smart Textronics Research Center opened at Gyeonggi Technopark in Ansan City, where the provincial government will cooperate with Germany on developing convergence technologies for intelligent electronic textiles.

Smart textronics, a portmanteau of 'textile' and 'electronics', refers to integrated electronic textiles and wearable electronic equipment.

The goal of the new research center is to combine the province's textile manufacturing know-how and Germany's original technologies to lead in the future global market for intelligent textronics.

Earlier, in November 2016, the two parties opened the Dream2Lab2Fab research center in the German city of Aachen, where they have been carrying out joint research projects.

The new center at Gyeonggi Technopark spans a total of 376 square meters, and employs 20 Korean and 15 German researchers.

Working with the province, the Korea Institute of Industrial Technology (KITECH), Sungkyunkwan University, the German state of North Rhine-Westphalia and RWTH Aachen University, the center plans to develop smart textronics technology, and commercialize it through local small and medium enterprises.

The province expects the new center to

grow by 33.6 percent on average every year, leading the global smart textronics market, which is projected to reach USD 4.7 billion by 2020.

Foreigners own over half of electric, electronics stocks

Foreign investors hold more than half of electric and electronics shares listed on South Korea's main stock market.

Foreign ownership of those stocks traded on the Korea Composite Stock Price Index (KOSPI) market came to 51.2 percent of their total market capitalization as of September 6, the highest among all industrial sectors, according to the data from the Korea Exchange.

The communication sector came next with 44.8 percent, followed by the steel and metal industry with 37 percent. In contrast, comparable figures were 5 percent for the paper and lumber sector, 8.3 percent for the precision medical equipment industry and 8.4 percent for the non-ferrous sector.

As of the same day, foreign ownership of all shares traded on the main bourse was worth KRW 560 trillion (USD 495 billion), accounting for 37.1 percent of the total market capitalization. Offshore investors owned KRW 27 trillion (USD 23.87 billion) worth of shares traded on the minor KOSDAQ market.

Foreign ownership of both KOSPI and KOSDAQ shares took up 33.9 percent of the combined value of the two stock markets.

What's Trending



Jeju Shinhwa World to open theme park, G-Dragon cafe

Jeju Shinhwa World, a resort complex under development on the resort island of Jeju, is gearing up to open a theme park and a K-pop entertainment center.

The resort project developed by Landing Jeju Development has opened in stages from earlier this year to offer over 300 condominiums and villas, and is set to open a theme park on September 30, said Jeju Free International City Development Center (JDC), a government institution which promotes investment on the island.

Landing Jeju Development is a subsidiary of Hong Kong-based Landing International Development, which mainly invests in resort and entertainment businesses.

The resort will also have a cafe and a bowling alley designed by BIGBANG leader G-Dragon in YG Town, a K-pop and leisure complex tentatively named after YG Entertainment, next month.

The resort, which spans approximately 2.5 million square meters, will gradually open other facilities, including a movie theme park, a casino, a K-pop entertainment center and a water park by 2019.

A movie theme park partnered by Lions Gate Entertainment Corporation, an American entertainment company, will open in the resort complex in 2019 to feature seven movie zones themed after blockbuster films, including "The Hunger Games," "The Twilight Saga" and "Now You See Me."

A total of KRW 1.32 trillion (USD 1.18 billion) in foreign direct investment, mostly from Chinese citizens, has been injected into the project, JDC said, noting it is actively seeking funds from non-Chinese investors to diversify sources of investment.

Source: Yonhap News

Did You Know?



According to A.T. Kearney, South Korea has ranked 18th in the FDI Confidence Index 2017. The institution asked business leaders in 27 countries the likelihood of them investing in a given country over the next three years. Then the individual answers were aggregated to produce the score for each country.

A.T. Kearney stated that the strong supply chain networks in Korea's electronics and automobile industries make the country a particularly appealing destination for foreign investment.

New and emerging trends in Korea's robot industry

Introduction

South Korea is known as the world leader in robot utilization for the manufacturing industry. The country also has the second largest market for industrial robots and is a key player in the service robot sector. With the Fourth Industrial Revolution fast approaching, robot technology along with technology related to artificial intelligence (AI), Internet of Things (IoT), augmented reality (AR) and virtual reality (VR) are receiving the spotlight. As such, the Korean government aims to lead this revolution with the help of the booming robot industry. In this article, the status of Korean robot industry along with the Korean government's robot policies will be discussed. After that, the prospects of Korean robot industry will be assessed with consideration of new trends in robotics.

The Global Robot Industry

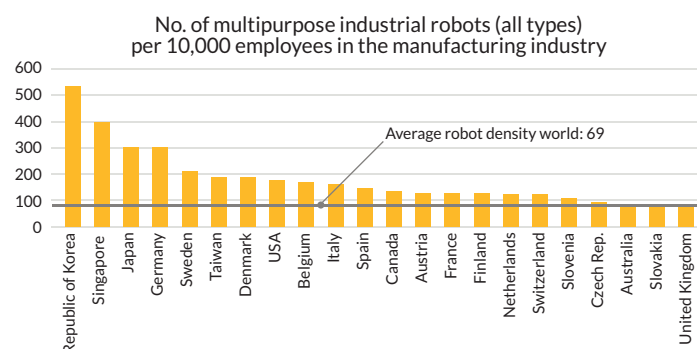
According to the IFR World Robotics Report 2016, the global robot market grew 9.7 percent to USD 17.9 billion, an increase of 13 percent over the last six years. Industrial robots¹ still dominated the market whereas personal service robots showed a steep growth rate and are expected to lead the development of the robot industry. The personal service robot market stood at USD 2.22 billion, an increase of 3.8 percent, while the professional service robot market hit USD 4.6 billion, growing by 13.8 percent.

At the 2017 RobotWorld², a remarkable trend of future industrial robots was featured at the collaborative robot pavilion. It is predicted that collaborative robots will lead the future industrial robot market by being easy-to-use, cost effective and safe. IFR also points out that the rise of the one person family and the dual income family, along with an ageing society, will give birth to the rise of the personal service robot market in the coming years. Professional service robots such as medical robots, logistics mobile robots and military robots are driving the market. IFR predicts the market of medical robots and logistics robots will increase sharply in five years.

The Korean Robot Industry

To more closely examine the Korean robot industry, two different sets of data were referred to in this article—the IFR World Robot Statistics Report 2016 and the Annual Robot Statistics Survey 2016 of KAR.

According to the IFR report, Korea was the world's second-largest market for industrial robots. In 2015, 38,285 new robots were installed in Korea, 55 percent higher than in 2014. The growth rate from 2010 and 2015 amounted to +10 percent. As for production, 31,940 units were produced, and this was 19 percent higher than the amount in 2014. In total, this amounted to about 12 percent of the global robot production. Furthermore, Korea was leading in the robot density category (the number of industrial robots per 10,000 workers in the manufacturing industry).



Source: World Robot Density (IFR 2016)

According to the Annual Robot Statistics Survey by KAR, there are about 2,000 companies specializing in industrial robots, service robots, and robot parts and components in Korea. 90 percent of the companies are small and medium-enterprises (SMEs) and their production volume stand at less than USD 1 million. Meanwhile, the Korean robot market in 2015 amounted to KRW 4.17 trillion (USD 368 million), an 11.9 percent increase compared to 2014.

By category, the Korean personal service robot market rose 1.2 percent of KRW 345 billion (USD 304 million) from 340 billion. Educational robots and personal household robots led the market. As for the professional service robot market, its total sales volume was KRW 283 billion (USD 250 million), a 75.2 rise compared to 2014. In this category, medical and societal safety robots were the major products that were sold.

Meanwhile, the industrial robot market grew KRW 2.58 trillion (USD 227 million) recording a 4.7 percent rise from 2014.

¹ International Federation of Robotics (IFR) categorizes the robot industry into two major categories: industrial robots and service robots. Industrial robots are "automatically controlled, reprogrammable, multipurpose manipulator programmable in three or more axes" (ISO 8373), while service robots are categorized into personal service robots and professional service robots. The personal service robots include robots for domestic tasks, entertainment robot, elderly and handicapped assistance. Professional service robots include medical robots, field robotics, military robots.

² RobotWorld is one of the global leading robot exhibitions organized by the Korea Association of Robot Industry (KAR) in Korea. During this event (Sept. 13-16, 2017), a collaborative robot pavilion was constructed by Korea's leading manufacturers such as Doosan Robotics, Hanwha Techwin and world-class collaborative robot manufacturers like Universal Robots, Rethink Robotics and dozens more overseas and Korean companies.

Growth rate of robots by category

Classifications	Yr.2013	Yr.2014	Yr.2015	Growth Rate(%)
Personal service robots	312,484	340,493	344,650	1.2
Professional service robots	159,926	161,527	282,990	75.2
Industrial robots	2,090,952	2,467,076	2,583,097	4.7
Robot parts and components	672,475	798,341	1,006,074	26
Overall	3,235,837	3,767,437	4,216,811	11.9

Source: Annual Robot Industry Statistics Survey (KAR, 2016)

The market share of manufacturing robots amounted to 61 percent, with service robots standing at 15 percent and robot parts making up 24 percent of market share. In regards to growth rates, manufacturing robots grew 3.3 percent while service robots grew by 23 percent. More notably, professional service robots such as medical robots and robots for military use grew by an astonishing 78 percent. What is also notable is that robot parts such as reducers, motion controllers, sensors and cables grew by 43.6 percent. In 2015, the Korean robot market (production basis) increased by 17 percent to KRW 4 trillion (USD 3.52 billion) from the previous year (KRW 3.4 trillion in 2014). As for industrial robots, production increased 4.7 percent from the previous year to KRW 2.58 trillion.

A recent report by the Ministry of Science and ICT shows that Korea lags slightly behind in robot technology compared to developed countries like the United States and Japan. According to the report, Korea is 4.2 years behind the United States and 1.2 years behind Japan. The country is, however, three years ahead of China.

Korean Government Policies to Promote Robotics Industry

In a bid to support the growth of robotics companies here in Korea, the Ministry of Trade, Industry and Energy (MOTIE) announced its '5-Year Plan of Robot Industry Development' in November 2016, which seeks to invest KRW 500 billion (USD 440 million) to 2022. The main policy directions are to expand public demand and strengthen the suppliers' capacity. The ministry plans to increase demand through the use of more service robots in the public sector and the development of smart factories.

The ministry plans to build state-of-the-art manufacturing robots in connection with smart factories. To expand the service robot market, it aims to start 80 pilot projects in the fields of medicine, rehabilitation and social safety.

As for strengthening the capacity of robot suppliers, the government will build 10 to 15 advanced robot commercialization research centers nationwide, as well as AI/ICT convergence centers and humanoid robot research centers.

MOTIE aims to build up high-quality components of reducers, sensors, controllers and motors by reducing reliance on

global robot parts suppliers. The budget for this project amounts to KRW 350 billion (USD 310 million).

The ministry will also strengthen overseas marketing bases, which will promote welding robots, rehabilitation robots, robots for road cleaning and so on. For overseas market expansion, it is considering dispatching trade missions at targeted overseas areas. In addition, the government will promote joint R&D projects with leading countries in robot technology. On this note, in 2016, Korea and the United States signed an MOU to cooperate in the fields of disaster response robotics by organizing robot workshops and R&D projects.

New Trends in Korean Robotics and Prospects

During the last decade, Korea has been more focused on service robotics. Although Korea has acquired strong core technology, service robots have so far not been able to gather a sizable market. As a result, the Korean government and the private sector are now focusing on potentially promising fields such as collaborative robots and surgical robots. Recently, two major Korean companies, Hanwha Techwin and Doosan Robotics, shook the robot industry by unveiling their state-of-the-art collaborative robots at the RobotWorld exhibition. Collaborative robots were selected as one of the five promising robot fields³ based on growth potential and domestic demand by the Korean government. As Market & Market (2016) predicts, the global collaborative robot market is expected to reach KRW 3.6 trillion (USD 3.1 billion) by 2022.

Due to population ageing, the medical robot market is expected to be increasingly promising in the years ahead. As for surgical robots, companies like Koh Young Technology and Meere Company are expected to take the lead in the global surgical robot market. Meanwhile, traditional industrial robot companies like Hyundai Robotics, Robostar and TES will most likely continue to do well since OLED and semiconductor business have a future positive outlook.

In the personal service robot market, Samsung, LG and Yujin Robot are on the right track, thanks to the growing vacuum cleaning market, while ROBOTIS and RoboRobo are showing steadfast growth in the educational robot market.

Conclusion

Korea is one of the world's top five leaders in the robot industry and is largely recognized for its technological prowess. Case in point, the country's very own walking humanoid robot called HUBO won the DARPA Robotics Challenge in 2015, further shedding international spotlight on Korea's robot industry. Although the country does not have industrial robot giants like ABB, Fanuc, Yaskawa or KUKA, Korea's innovative technology and entrepreneurial spirit will continue to shape the international market.

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³In November, 2016, MOTIE designated five promising products categories based on growth potential and domestic demand. They are collaborative/dual-arm robots, medical/rehabilitation robots, autonomous transport robots, personal service robots and societal security robots.

Success Story

Stäubli Korea

Man and Machine



From the beloved, beeping R2-D2 from “Star Wars” or the villainous T-1000 from the “Terminator” films, robots have played leading roles in more Hollywood blockbusters than we can count. That’s probably why images of shiny humanoids from sci-fi films first come to mind when we think of robots. But robots aren’t just fictional characters popping up in films; they actually play a major role in our everyday lives. And with the Fourth Industrial Revolution to radically change the way we live, countries like Korea are preparing to embrace this transformation.

According to a report by the International Federation of Robotics, Korea is home to one of the world’s largest sales markets for industrial robots. The country is also expected to achieve an annual growth rate of 5 percent in robot sales and holds the top spot for the world’s highest robot density, which refers to the ratio of industrial robots to employees. Add to that the Korean government’s active support and funding in the robotics sector, and you have the perfect ecosystem for mechatronics companies like Stäubli to flourish.

“Stäubli knew that Korea was a country with huge potential in the robotics industry,” says Moon-Seog Kim, business unit manager of Stäubli Korea. “The company was confident that by doing business here, it would be able to secure its competitiveness on an international scale.”

Stäubli was first founded in Switzerland

in 1892 as a small workshop called ‘Schelling & Stäubli’. It then set up a manufacturing site in France in 1909 and further expanded its business in other parts of the world, including the United States, China, Japan and Korea. Over the last 125 years, Stäubli has grown into an international mechatronics solutions provider with a global workforce of over 4,500 in 29 countries. The company currently focuses on three major activities—connectors, robotics and textiles—serving customers who want to increase their productivity in many industrial sectors.

Although the company initially focused on textiles, Stäubli Korea began specializing in connection solutions and robots in 2010. Despite its relatively short history in the robotics industry, Stäubli Korea has already signed MOUs with a number of Korean small and medium-enterprises to localize its products. Most notably, the company kicked off TX2 Technology Day last month in Daegu and Seoul to showcase its latest lineup of TX2 robots

to the Korean public.

The robots are being hailed by the company as the next generation of fast and precise 6-axis robots, as they are “redefining performance with the optimum balance of speed, rigidity, size and envelope.” Most notably, the TX2 robots can be used in all areas, including the most harsh and restrictive environments.

“The new TX2 robots are a clear example of what we can expect in the Fourth Industrial Revolution because they will further enhance the manufacturing capacity of smart factories” says Kim. “The Korean government is actively supporting the growth of these factories, which will strengthen the collaboration between man and machine.”

As Kim mentions, the Korean government is playing an indispensable role in the rise of smart factories. Earlier this year, the Ministry of Trade, Industry and Energy an-

Moving towards a smarter world

With its unrivaled expertise in mechatronics, Stäubli Korea is more than ready to usher in the Fourth Industrial Revolution



nounced that the private and public sectors will work together to increase the number of smart factories throughout the country and help train people to work in these factories.

When asked what the future holds for Stäubli, Kim says that thanks to Korea's

ideal business environment and government support, the demand for robots will increase. "Our products offer crucial solutions to challenges that can arise from the Fourth Industrial Revolution. On this note, I'm confident that Stäubli will gain a more competitive edge here in Korea."

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KOTRA's Services

KOTRA's Investment Consulting Center (ICC) helps foreigners make investments in Korea without any barriers. For foreign investors, our consultants provide tailored consulting services free of charge from business registration to law, taxation and labor issues. The center is also staffed by government officials and experts in the public sector who can offer professional consultations on tariffs, taxation and site selection.

What does the ICC offer?

[Investment Consulting Services]

- FDI Consulting

We inform and consult foreign investors and foreign-invested companies about the basics of foreign direct investment in Korea, investment notification process, relevant policies and incentive schemes.

- Investment Notification & Registration

Foreign investors and foreign-invested companies can submit their application forms of investment notification and registration to the center. The certificate of registration of a foreign-invested company can also be issued here.

- ICC Visiting Services

We visit foreign-invested companies and foreign investors in Korea and abroad to provide customized consulting services.

[English Translations of FDI-related Laws]

The Investment Counseling Center translates Korea's FDI-related laws into English to help foreign-invested companies do business in Korea. To see Korea's FDI-related laws in English, please visit IK website (www.investkorea.org) and click 'Statutes of the Republic of Korea' on the bottom. Since 2013, the center has offered translation services for more than 40 Korean laws related to foreign direct investment.

[Settlement Services]

- Assistance with Daily Life in Korea

Our English and Japanese-speaking consultants provide personalized consultations on medical services and education for foreigners to help investors settle successfully in Korea. For foreign investors who are not familiar with Korea, we also have daily personal assistants who can accompany them and help with their communication and paperwork.

- Publications

We provide a variety of materials for foreign investors, such as 'Doing Business in Korea', 'Guide to Establishing a Business in Korea' and 'Guide to Living in Korea'.

[Administrative Assistance]

- Visa Issuance

Foreign investors in Korea can apply for D-8 (treaty investors) and F-3 (family dependents) visas. Visa processing usually takes one or two weeks, or even several months. But at the ICC, investors can get their visa on the day of application.

- Driver's License

At the ICC, investors can either exchange their foreign driver's license for a Korean one or get a new international driver's license.

Why does Korea focus on notification-based FDI?



Growth planning or indicator targeting used to be practiced only in the socialist countries, but this is no longer the case. Many market-driven developing economies are adopting the indicative planning system in which the target growth rates are adjusted according to changes in the market conditions.

Indicator targeting is commonplace almost everywhere. Inflation targeting is a good example. Inflation targeting is a monetary regime in which the central bank has an explicit target inflation rate for the medium term and announces this inflation rate to the public. The purpose of the central bank's inflation targeting is to maintain price stability by changing the interest rates or monetary aggregates. In the early 1990s, three countries, New Zealand, Canada and the United Kingdom, implemented fully-fledged inflation targeting. Thereafter many other countries with high inflation followed suit.

In a similar vein, many countries implement FDI targeting. Their government places a very high priority in attracting FDI and they believe FDI attraction is the shortcut to high growth and fast

industrialization. They offer various attractive incentives to potential foreign investors and set the target FDI to expedite the attraction of foreign direct investments. They are using two indicators—notification-based FDI (NBF) and arrival-based FDI (ABF).

The NBF refers to the amount of investment that the foreign investor plans to bring to the host country. They notify their investment plan to the relevant ministry in advance. For Korea, the relevant ministry is the Ministry of Trade, Industry, and Energy (MOTIE). The ABF refers to the actual amount of investment the foreign investor has brought in. So as of end of the year, the two indicators do not exactly coincide with each other.

Nevertheless, these two indicators are equally important and the MOTIE carefully monitors the notified amount and actual amount. Usually the actual amount tends to fall short of the notified amount for many reasons. First of all, the investors do not bring in the full investment amount at once from the beginning. They usually go through different stages of investment, which includes acquiring their business office and residence, making contracts for purchasing land and constructing factories and bringing in equipment. It takes a while for them to go through each stage.

During the process of investment, investors run into unexpected problems in the host country. They can encounter difficulty in financing their investment in the home country. Also, if investors decide that their future market is not promising, they will cut their investment. For these reasons, the gap between the intended amount and actual amount will always exist.

However, some critics point out that the MOTIE is too focused on attaining notification-based FDI. They point to international organizations such as the UNCTAD, which publishes the FDI sta-

tistics of its member countries on the basis of arrivals. They argue that the notification-based FDI indicator should be dropped because it may distort the true situation. Unfortunately, however, this argument lacks credibility.

These critics have failed to understand that the objective of focusing on the NBF in Korea is much different than that of the UNCTAD publishing ABF figures. The Korean government needs to know the ABF in advance for policy purposes. The government has to secure the upper ceiling of the budget to support the foreign investors in advance. Also with the information of the FDI target on a notification basis, the government can project the effects of FDI on growth, exports and employment in advance. In contrast, the UNCTAD's main objective is to provide the information of the actual amount of FDI for member countries ex post. This information is useful for comparing FDIs by country.

From the standpoint of the government of any country, it needs to monitor two indicators all the time to make their FDI policy successful. It is not the matter of selecting one indicator over the other.

*By Dr. Jeffrey I. Kim
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Who is the Ombudsman?

The Foreign Investment Ombudsman and his grievance resolution body collect and analyze information concerning problems facing foreign firms, request cooperation from relevant government agencies, propose new policies to improve the foreign investment promotion system and carry out other necessary tasks to assist foreign-invested companies in resolving their grievances.

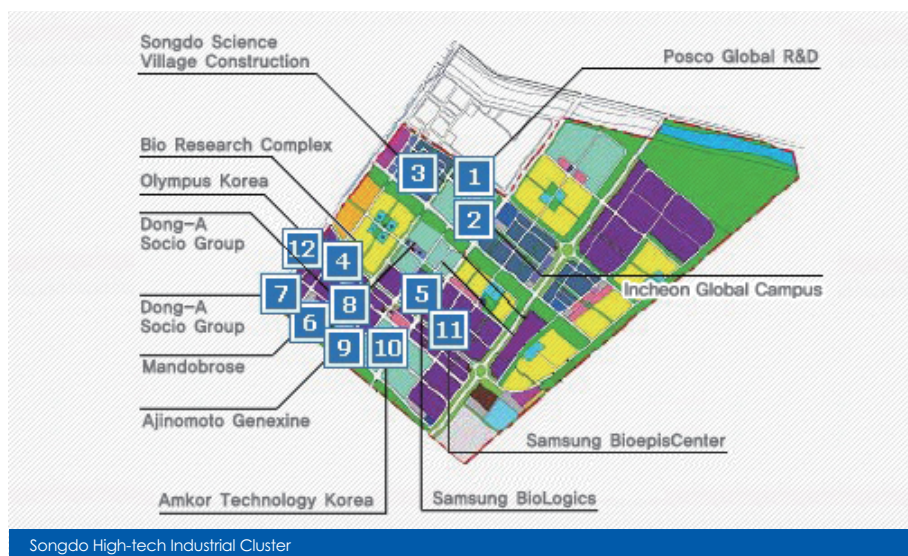
Incheon's Songdo to shake up Korea's tech scene

Since the 1980s, South Korea's high-tech industry has been undergoing rapid growth. The country has maintained its position as one of the pioneers in technological innovation. Home to companies like Samsung SDI and SK Hynix, the country is striving to enhance its technological prowess by constructing industrial clusters that focus on advanced technology. And among the many clusters in Korea, the one currently receiving the most spotlight is the Songdo High-Tech Industrial Cluster in the Incheon Free Economic Zone (IFEZ).

Songdo High-tech Industrial Cluster

The Songdo High-tech Industrial Cluster is located within the IFEZ and spans over 3 million square meters. There are already a handful of businesses that are doing business here, including domestic conglomerates such as POSCO and Samsung Biologics. Japanese companies like Olympus and TOK have moved in as well. Olympus is currently constructing K-TEC (Olympus Korea Training & Education Center), which provides professional training for local medical staff and houses demonstrations of their new products.

The cluster's potential is to be amplified in 2018. Global corporations will be introduced to the area, including 10 businesses specializing in automotive parts and semiconductor inspection equipment. Such investments will no doubt vitalize the cluster and the local economy by bringing in new jobs. In May of 2018, various companies will open their R&D research centers in the area, providing a venue for the development of automotive and semiconductor technology. In addition, Japan's biggest manufacturer of household products will construct a manufacturing facility and invest more than USD 500 million, further rejuvenating the regional economy.



In a bid to enhance the competitiveness of this high-tech cluster, a complex specializing in robots will be established. Songdo will provide a platform in which companies focusing on various types of industrial robots may compete, cooperate and collaborate with each other to support the development of this particular sector.

Moreover, educational facilities have also been located within the cluster; the Songdo Science Village and the Incheon Global Campus provide high-quality human capital to businesses. The global campus will soon accommodate about 10,000 students and 10 different schools. Along with the manpower produced in the nearby capital, Seoul, the global campus will regularly provide the industry with plenty of well-educated talented. The industry, education and research centers are expected to accelerate the research and development process.

The cluster also boasts state-of-the-art logistical infrastructure. Located in Incheon, the cluster naturally has full access to one of the best ports and airports in the world. The Incheon International Airport, which is less than an hour away, offers excellent international cargo transport services made possible due to its



world-class flight network. The logistical benefits don't end there. The Incheon New Port, which has the highest growth rate of all domestic ports (15 percent annual growth), is always ready to accommodate the country's largest economic zone. Better yet, by 2030 the port will be capable of handling 4.2 million TEU containers per year.

The Songdo High-tech Industrial Cluster is operated under the goal of cultivating a knowledge-based advanced industry. Already the cluster has shown its potential and provided a glimpse of what it is truly capable of. With more investments and knowledge accumulating in the area, it's just a matter of time until Songdo unleashes its full potential.



KOREA,
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LINK TO SUCCESS

Invest Korea Week 2017

Hosted by the Ministry of Trade, Industry and Energy (MOTIE) and organized by the Korea Trade-Investment Promotion Agency (KOTRA), Invest Korea Week (IKW) is Korea's largest international investment promotion event. Formerly known as Foreign Investment Week, IKW is committed to bridging foreign investors and Korean companies in finding business opportunities in Korea and beyond.

Last year, over 1,4000 attendees, including foreign investors, members of the foreign and local press, executives of Korean companies and local government officials, participated in the event.

This year's IKW will allow participants to learn more about Korea's exciting investment environment, attend various investment conferences and network with executives from foreign and domestic companies and high-level government officials. Participants can also take part in site visits to some of Korea's most innovative companies. In a bid to help foreign companies find promising Korean talent, a job fair will also be held on the sidelines of IKW.

companies and high-level government officials. Participants can also take part in site visits to some of Korea's most innovative companies. In a bid to help foreign companies find promising Korean talent, a job fair will also be held on the sidelines of IKW.

Details

Date

November 7-9, 2017

Venue

Grand InterContinental Seoul Parnas

Participants

- Over 2,500 foreign investors
- Korean businesses
- HR managers of foreign businesses
- job seekers and foreign journalists

Day 1

- FEZ Night

Day 2

- Opening Ceremony
- Global Investment Promotion Forum
- Meeting with Senior Government Officials
- Welcome Reception
- Job Fair

Day 3

- Accelerating K-Startup
- 1:1 Business Partnering
- Investment Site Visits

For more information, visit investkoreaweek.kr

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**INVEST
KOREA**

Every month, KOTRA Express introduces one Korean SME that seeks to expand its network by working with foreign partners. In the October issue, we take a look at one of Korea's most promising robotics companies.

AIR ROBOT

Air Robot Co. Ltd. is a technology-intensive company that specializes in the development and manufacturing of robots. Air Robot researches, develops and manufactures robots and Micro Aerial Vehicles (MAVs).

Air Robot was established on December 1, 2005 to provide consumers with useful products that incorporate creative and state-of-the-art technology. The company most notably launched the Riding Intelligent Robot (RINGBO), the world's first commercial riding robot that serves as a children's toy. This product has been exported and sold both domestically and overseas and has aided the development of further proprietary products. It has also facilitated the development of domestic and overseas toy markets.

RINGBO enables the driver to control directions by using joystick rather than a steering wheel. As the world's first intelligent riding robot manufactured using state-of-the-art technology, RINGBO has obstacle recognition sensors and allows children as young as one or two-years-old to enjoy its features.

Considering that RINGBO is used by children, the robot stops when the user takes their foot off the pedal and operates only when the user sits down in a stable position and presses the pedal. It also notifies the user of its operational status, including when it needs to be charged or when it detects an obstacle.



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Operated by KOTRA, buyKOREA is Korea's premier e-marketplace. If you want to find out more about the products mentioned above, please visit

www.buyKOREA.org



WEB VER.



IOS VER.



ANDROID VER.



Economic Indicators

GDP	2012	2013	2014	2015	2016
Nominal (USD million)	1,222,400	1,305,400	1,411,000	1,382,400	1,411,000
PPP (USD million)	1,611,273	1,644,777	1,706,689	1,749,804	1,832,073
GDP Growth Rate (Y-o-Y) (%)	2.3	2.9	3.3	2.8	2.8

Source: The Bank of Korea, September 2017

(Unit: USD)

GDP Per Capita	2014	2015	2016	2017
Nominal	27,811	27,105	27,539	29,115
PPP	35,211	36,390	37,740	39,447

Source: International Monetary Fund, April 2017

(Unit: USD million)

Foreign Trade	2012	2013	2014	2015	2016	August 2017
Exports	547,870	559,632	572,665	526,757	495,426	375,070
Imports	519,584	515,586	525,515	436,499	406,193	313,289
Trade Balance	28,285	44,047	47,150	90,258	89,233	61,780

Source: Korea International Trade Association, September 2017

(Unit: KRW)

KRW-USD Foreign Exchange Rate	2012	2013	2014	2015	2016	August 2017
	1,126.9	1,095.0	1,053.2	1,131.5	1,160.5	1,130.79

Source: The Bank of Korea, September 2017

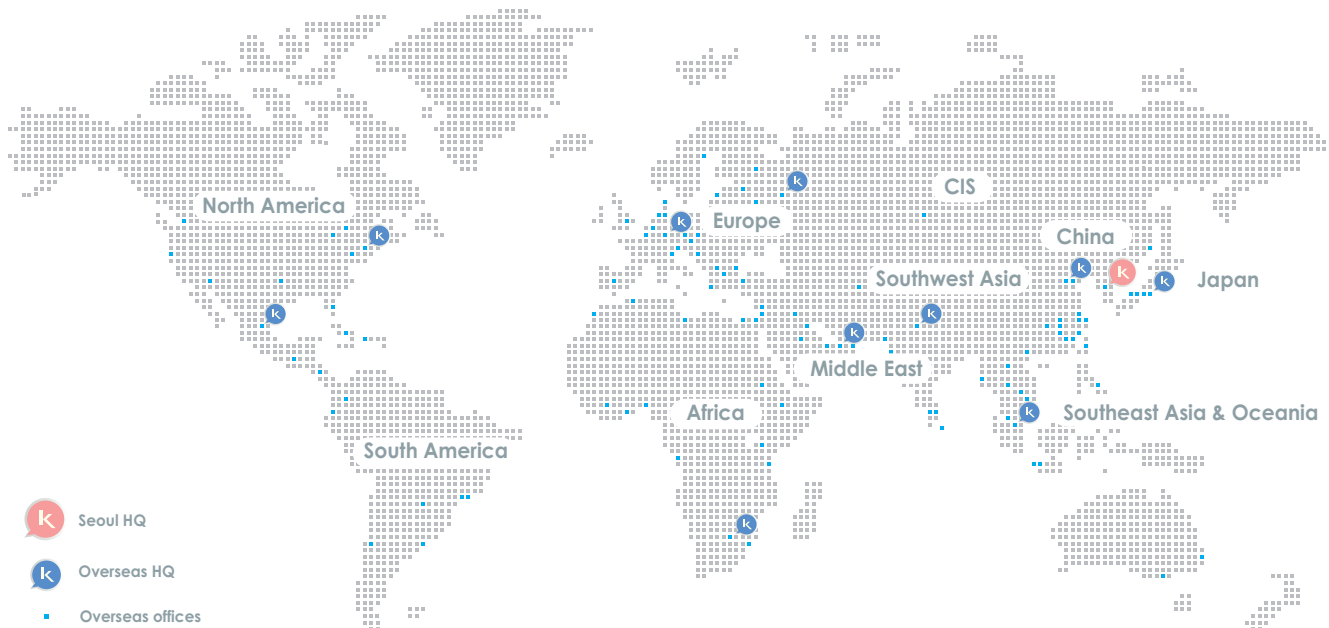
(Unit: USD million)

Balance of Current Account	2012	2013	2014	2015	2016	July 2017
	50,835.0	81,148.2	84,373.0	105,939.6	98,677.4	7,261.3

Source: The Bank of Korea, September 2017

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KOTRA Express is your source for all things related to Korea's economy, trade and foreign direct investment. Find news, interviews with investors and buyers, site spotlights, industry introduction and much more, every month.

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