



BRIDGING THE GAP

Ericsson-LG is changing the way we communicate by bridging the digital divide

Patrick Johansson CEO **Ericsson-LG Co., Ltd**

Year	Base Money (a)	M2 (b)
1980	3,244	13,087
1990	13,811	145,604
2000	28,238	707,699
2010	74,545	1,660,530
2015	131,439	2,247,375



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Dear Readers,

It is with great pleasure to introduce myself to all of you. My name is Dooyoung Kim, Executive Vice President for Strategic Marketing at KOTRA. In just a span of a week, the weather in Korea has changed dramatically—flowers are blooming and it's starting to finally feel like spring. Things here at KOTRA are also becoming livelier, especially at the Strategic Marketing Division, the department in charge of spurring global business partnerships.

For those of you who might not be familiar with KOTRA, the Strategic Marketing Division helps Korean small and medium enterprises (SMEs) enter the global value chain by supplying parts and materials to foreign companies. We also help domestic SMEs conduct joint research with global companies for shared growth and prosperity. Furthermore, we hold a number of matching events and continually monitor overseas trends, helping Korean SMEs showcase their cutting-edge products to the world. The division provides customized marketing services through exhibitions and seminars on innovative industries, including automobiles, ICT and high-end consumer goods. In particular, we're striving to spearhead the upcoming Fourth Industrial Revolution.

Unlike the previous industrial revolution, the upcoming era focuses on a converged, post-industrial society that requires cooperation among a broad spectrum of industries. On that note, the April issue of *KOTRA Express* takes a closer look at the Internet of Things (IoT), an important component of this revolution. You'll get to hear from Mr. Patrick Johansson, CEO of Ericsson-LG, on how the company is completely revolutionizing the way we communicate. You'll also get an in-depth analysis of the current trend and prospects of Korea's IoT market, as well as the latest smart grid projects taking place in Jeju Island.

We're hopeful that just like the weather, things will soon warm up for the world economy. I kindly ask for continued support from our readers and hope to connect with you all soon. Thank you.

Sincerely,

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

Dooyoung Kim/ Executive Vice President for Strategic Marketing

KOTRA HOLDS IR EVENT IN SINGAPORE AND HONG KONG

In a bid to promote Korea as an ideal investment destination for Asian financial investors, KOTRA hosted an investor relations (IR) event in Singapore and Hong Kong. The IR session, which ran from March 13 to 16, introduced investment incentives, successful investment cases and major business opportunities in the cultural content and ICT industries to participants. One-on-one meetings were also held for Singapore's sovereign wealth fund and companies wanting to reinvest in Korea.

In Hong Kong, KOTRA held fruitful discussions with regional development companies and talked to them about

investment opportunities in Korea. About 30 people from the Ministry of Trade, Industry and Energy (MOTIE), KOTRA and consulting companies from Korea attended the event.

These companies included NOD Bizware, a company that develops phone applications; AKAIIntelligence, an enterprise that makes AI robots; and CNP Story Entertainment, a cultural content company specializing in tourism, beauty and food.

KOTRA expects these events to expand cooperation networks between Korea and the Greater China Region.

KOTRA AND DEFENSE MINISTRY APPROVES PURCHASE OF KOREAN SELF-PROPELLED HOWITZERS TO FINLAND



Finland will purchase K9 Thunder 155mm self-propelled howitzers from South Korea.

On March 2, KOTRA and the Ministry

of Defense, along with Finnish defense minister Jussi Niinistö, approved the purchase of 48 former South Korean Army K9s to Finland. This is Korea's third exportation of howitzers, following deals with Turkey (2001) and Poland (2014). The contract is worth approximately EUR 146 million (USD 155 million) and the K9s will be exported by 2025.

As Korea's government-to-government managing agency, KOTRA was able to complete and implement the export contract with support from the Defense Acquisition Program Administration.

JAPANESE COMPANIES SHOW INTEREST IN RECRUITING KOREA'S HIGHLY SKILLED WORKFORCE

To help young Korean job seekers find employment overseas, KOTRA hosted a job fair in Osaka, Japan on March 9. In attendance were 23 Japanese companies and 130 Korean job seekers.

"Not only Korean exchange students but about 90 students came from Korea and expressed great interest in working in Japan. We will continue to support our young people to find good jobs overseas," said Lee Gwangho, Head of KOTRA's Osaka office.

The job fair offered plenty of opportu-

nities for companies and job seekers to get to know each other, including interview sessions, recruitment programs, job seminars and employment mentoring classes for highly-skilled individuals.

A representative from the semiconductor manufacturing company Denshigiken who recruited four Koreans last year said, "Although we hired Korean job seekers with no former work experience, they were already very skilled with computer-aided design, so we were able to work with them right away."

KOTRA HOLDS KOREAN PAVILION AT 2017 GAME CONNECTION AMERICA

From February 27 to March 1, KOTRA launched its Korean Pavilion at Game Connection America 2017 (GCA) in Silicon Valley.

Participating companies were highly satisfied with business consulting opportunities with internationally recognized companies, including EA and Blizzard. Foreign companies were especially impressed with the highly advanced technology of Korean companies.

In regards to the event, Yun-Kang

Won, President of Latis Global (an action mobile game) said, "Thanks to this opportunity, I saw the possibility of entering into the American market, which is the biggest gaming market after China."

Meanwhile, Game Connection is an international event where over 2700 developers, publishers, distributors and service producers come to find new partners and/or (in the case of service providers) find new clients.

Trade News

S.KOREA, 5 CENTRAL AMERICAN NATIONS INITIAL FTA

According to the Ministry of Trade, Industry and Energy (MOTIE) on March 12, South Korea and five Central American countries have initialed a free trade agreement (FTA), which is expected to pave wider road for Asia's fourth-largest economy to tap deeply into the continent.

In November of last year, South Korea and six Central American nations—Nicaragua, El Salvador, Honduras, Costa Rica, Panama and Guatemala—struck the FTA deal, over one year after the two parties launched official negotiations in June

2015. But Guatemala has not initialed the deal, as the country delayed its participation in the free trade deal due to unresolved domestic issues.

Under the deal, they agreed to eliminate tariffs on about 95 percent of goods made from each country within 10 years after the pact takes effect.

The countries will officially sign it in the first half of the year. After signing, the free trade agreement will be submitted to the countries' respective legislatures for approval before it can be implemented.

KOREA-U.S. FTA RESULTS IN SHARED ECONOMIC GROWTH

On March 15, MOTIE announced that despite a sluggish global economy, the United States and Korea were able to keep trade flows on an upward trajectory thanks to the Korea-U.S. FTA.

According to MOTIE, Korea's exports to the U.S. increased 3.4 percent on average from 2012 to 2016. In addition, Korean investment in the U.S. between 2012 and 2016 amounted to USD 36.97 billion, a 60.1 percent increase compared to USD 23 billion of investment between 2007 and 2011. The expansion of Korean firms like Hyundai Mobis, LG Chem and

POSCO into the midwest, as well as investments in factories and energy development, is believed to have helped boost America's manufacturing sector.

U.S. investment in Korea showed significant increase as well, with USD 20.16 billion invested between 2012 and 2016. In 2015, investments were at a record high of USD 5.48 billion. Korea-U.S. investments, which had been focused on finance, insurance, electronics, retail and wholesale businesses before the KORUS FTA, were expanded into new industries such as IT and biotech.

Government & Policy

S.KOREA TO EASE NEW ENERGY INDUSTRY REGULATIONS

MOTIE announced on March 2 that following the 11th Trade Investment Promotion Meeting held last month, it has settled on seven measures to improve new energy industry regulations.

Previously, a significant number of local governments had introduced legislation that restricted the installation of renewable energy facilities such as solar photovoltaic (PV) systems to be at least 100 to 1,500 meters away from roads or residential areas.

The intent had been to minimize complaints by residents about noises or light emitted from the renewable energy facilities,

but the inflexible distance restrictions had failed to take into consideration the local environment or circumstances, instead making it more difficult for companies to operate.

The government has thus implemented a new set of guidelines, specifying that the distance regulations be repealed in principle, or reset to a maximum distance of 100 meters.

The new guidelines are expected to enable the initiation of some 210 solar PV projects (worth around USD 102.7 million) that have been pending.

GOV'T UNVEILS R&D ROAD MAP FOR 2018

The government unveiled its research and development (R&D) plan for next year on March 14 to secure a new growth strategy to cope with the fast-paced industrial transformation.

Under the road map crafted by the Ministry of Science, ICT and Future Planning, the government will increase R&D productivity by securing critical intelligence information technologies that characterize the so-called fourth industrial revolution.

The ministry said the plan calls for continued support for the basic science sector by injecting KRW 1.5 trillion (USD 1.3 billion) in 2018, up from KRW 1.26 trillion allocated for this year, as the sector will eventually lead to the development of cutting-edge technologies.

The ministry said technologies such as the Internet of Things (IoT) and AI are forecast to generate business opportunities and profits worth KRW 560 trillion (USD 500.8 billion) by 2030.

U.S. Rate Hike to Bring New Paradigm of Growth

This March, the Federal Open Market Committee (FOMC) made a bold turnaround move by raising the federal funds rate by 0.25 percent; from 0.5-0.75 percent to 0.75-1 percent. This rate hike signifies that the FOMC is departing from the decade-old tradition of low rates, instead opting for more “normal” rates. No one knows what exactly what the normal rates are, but everybody knows for certain that the current rate is too low. No matter who has initiated it, and no matter how successful it has been in dealing with the post subprime mortgage crisis, this decade-long low rate regime should come to an end and give way to a new world where normal rates preside.

The normalization policy of returning to a higher rate is hard to understand for most people, especially when the economy has been sluggish for quite some time and a majority of people are ridden with heavy debt. Despite the assurances of the U.S. Federal Reserve about strong employment and inflation statistics, many people believe the U.S. economy is still far from full employment, and a higher rate is hard to accept. For countries like Korea, such a rate might be even more difficult to swallow.

But like always, there is the other side of the coin. A higher rate could actually be a blessing, helping the economy come out of a long economic slump. First, this rate policy allows higher income to depositors. Under a high rate regime, commercial banks naturally have to ask for higher rates to the borrowers, but at the same time, they should provide higher rates to depositors in order to attract new deposits. Thus, a higher deposit rate makes it possible for depositors to have a higher income. In Korea, aggregate deposits of the banking industry amounts to almost KRW 2.3 quadrillion (USD 2.07 trillion), and a 1 percent increase in the deposit rate means KRW 23 trillion

(USD 20.65 billion) extra interest income to depositors, which equals about 3 percent of KRW 770 trillion (USD 691.46 billion) in private consumption. Therefore, an increase in the deposit interest rate could work as a strong stimulant for private consumption.

Second, a higher rate would enable banks to create more credit to the system by encouraging more deposits to the banking system. In other words, a higher rate could encourage money supply by the credit creation process. It may seem odd, but past history has proved that this is effective. The low rate regime in the past discouraged bank savings, substantially reducing the growth of money supply. One of the critical consequences was a secular fall of the money multiplier. The money multiplier, which is defined as the ratio of broad money (M2) over base money, is a barometer of banking activities—the higher the multiplier, the more active the banking industry. As the table below shows, the money multiplier in Korea has surged from 4 in 1980 to 25 in 2000, but it dropped to 16 in 2016.

Third, it would also encourage financial industries, such as the banking and insurance industries, by making the net interest margin (NIM) a lot higher. Indeed, low rates from 2008 until recently have made the profitability of banking and insurance industries extremely low because the NIM was chronically dipping. Now, however, the banking and insurance industries expect better profitability, and this could be a driving force of new economic growth in the financial industries.

Fourth, a higher rate would make financial industries more balanced by channeling funds from stock markets to other fields such as bonds, direct investments and various funds. So far under an extremely low rate environment, global stock markets have been overheated while other financial industries are suffer-

Money Multiplier in Korea

<Unit: KRW trillion, %>

Year	Base Money (a)	M2 (b)	Multiplier (b/a)
1980	3,244	13,087	4
1990	13,811	145,604	10.5
2000	28,238	707,699	25.1
2010	74,545	1,660,530	22.3
2015	131,439	2,247,375	17.1
2016	143,435	2,407,459	16.8

Source: Bank of Korea

ing relative impasse. The unbalanced development of financial markets with overheating stock markets amid a bleak banking industry and bond markets should arouse serious concern for regulators. All these imbalances were believed to be the outcome of abnormally low rates in the past.

Now, the Bank of Korea and the Financial Services Commission have to make a very difficult decision on the interest rate policy. Despite economic uncertainty, it would be more optimal for the government to forgo its policy of leaning against the wind. That is, it can't let the rate fix stay the way it is for an indefinite amount of time. A better solution would be to lean with the wind and let the markets dictate where the interest rates and exchange rates should go. The government should not excessively intervene in their course. Otherwise, they have to face bigger challenges ahead.

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** The opinions expressed in this article are the author's own and do not reflect the view of KOTRA.*



According to the World Health Organization, the average life expectancy in South Korea is 82.3. Pundits expect this number to grow even higher in the future, especially as the country's latest IT technology is fusing with healthcare and medical industries. To further spur lively discussion on this topic, KOTRA and the Ministry of Trade, Industry and Energy (MOTIE) held the Global Bio & Medical Plaza (GBMP) 2017 on the sidelines of the 33rd Korea International Medical & Hospital Equipment Show (KIMES) on March 16-17 in Seoul, South Korea.

This year's event, which first kicked off in 2008, was comprised of one-on-one business meetings, seminars and forums on the global healthcare industry. Over 200 foreign buyers from 59 countries and 280 Korean companies specializing in medical supplies and equipment attended the event.

"The medical industry is rapidly changing due to technological advancements, which is good news for Korea's healthcare market," said Kim Doo Young, KOTRA's Executive Vice President for Strategic Marketing, during his opening remarks. "With the country soon to welcome the fourth industrial revolution, this convergence of ICT technology and healthcare will bring about new opportunities for innovation. That's why events like GBMP are so significant."

As one of the world's fastest growing industries, the medical device market is

Global Bio & Medical Plaza 2017 Sparks Discussion on ICT's Role in Healthcare Transformation

As Korea faces a rapidly aging population, the country is looking for new ways to combine technology and the healthcare

worth USD 337 billion, with this number likely to hit USD 440 billion by 2020. Korea, meanwhile, is home to the ninth biggest medical device market, and its export volume is estimated to be worth USD 2.6 billion.

Against this backdrop, KOTRA invited several guest speakers in the medical and healthcare industry to GBMP, including Dr. Andrew Norden, Deputy Chief Health Officer at IBM Watson Health. Like Korea, IBM is ushering in a new era of technology, aspiring to improve lives and give hope by addressing the world's most pressing health challenges through cognitive computing. Its cognitive computing platform has an advanced ability to analyze the meaning and context of data in clinical notes and reports, and has been taught to make diagnosis for patients based on medical images. IBM Watson



Health is taking its technology overseas as well, collaborating with a number of big hospitals in Asia. Many hospitals in Asia are currently using Watson for Oncology. "In Korea, Gil Medical Center and Pusan National University Hospital are informing patients about their conditions and possible treatments through our system," said Norden. "We're excited to work with more Korean companies and hospitals in the future."



Along with information on the latest medical trends, GBMP provided seminars for Korean suppliers wishing to enter the overseas markets, including the National Health Service in England and the medical device market in Hungary. Furthermore,

Dr. John Wagacha Burton, Senior Public Health Officer of the United Nations High Commissioner for Refugees, touched upon the agency's operations and collaboration opportunities in Kenya's medical field.

One-on-one business meetings and MOU ceremonies were also held during the event, further expanding Korea's medical network on a global scale. 29 contracts were signed between foreign buyers and Korean suppliers as a result, with export contracts and MOUs amounting to USD 11.3 million.

KOTRA doesn't plan on stopping with events like GBMP to spur the growth of

Korea's healthcare industry. According to Kim Doo Young, the agency will dispatch a medical mission to Latin America, the Middle East, Southeast Asia and other regions to nurture promising healthcare industries and diversify export markets.

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IBM Watson Health's Major Cooperation Projects in Korea

Last year alone, nearly 44,000 oncology research papers were published in medical journals around the world. This amounts to nearly 122 new papers published every day, outpacing the ability of humans to keep up with the proliferation of medical knowledge. Using natural language processing, clinicians using IBM's Watson for Oncology is able to quickly extract clinically relevant information from this trove of data to gather evidence specific to a patient's individual health needs. Watson for Oncology has ingested nearly 15 million pages of medical content, including more than 200 medical textbooks and 300 medical journals. Watson provides doctors with access to information from peer reviewed studies, clinical guidelines and expert perspectives. IBM Watson Health is working with the following Korean organizations to spur the growth of the AI and health industries.

Gachon University Gil Medical Center

Gachon University Gil Medical Center adopted IBM Watson for Oncology trained by Memorial Sloan Kettering, which is designed to provide physicians with evidence-based medical treatment options. The cloud-based platform ana-

lyzes large volumes of structured and unstructured data to help physicians offer individualized, data-driven treatment options for cancer patients. This is the first deployment of IBM Watson in Korea.

Located in Incheon, Gachon University Gil Medical Center is the fifth largest of Korea's general hospitals with 1,400 licensed beds. Oncologists at Gil Medical Center care for 50,000 cancer patients each year. IBM is working with Gil Medical Center to localize the offering based on Korean medical guidelines and language needs.

This deal with Gil Medical Center shows ongoing momentum for Watson in the Korea market.

Pusan National University Hospital

Pusan National University Hospital adopted IBM's Watson for Oncology and Watson for Genomics in its treatments as part of its efforts to lead the domestic precision medicine sector. It is the first time that a Korean hospital introduced the two technologies altogether. The new software programs help clinicians to analyze the massive amounts of data including research findings and patients' genetic information to offer individualized treatment options.

Precision medicine is a new approach for disease treatment that analyzes a patient's genetic profile, medical records, clinical data and even lifestyle to provide targeted treatments for each patient. The global precision medicine market is growing by 11 percent annually, and is expected to reach about KRW 136 trillion (USD 121.18 billion) by 2025, up from KRW 35 trillion (USD 31.19 billion) in 2015. The United States, United Kingdom, China and France are scrambling to establish precision medicine research cohorts to expand their scope of investments and digitize a vast array of genetic content. Keeping up with this trend, Korea has also recently included precision medicine in its agendas for nine national strategic projects, accelerating efforts to create a relevant infrastructure and an ecosystem for the sector's long-term growth.





Latest Developments in Korea's IoT Industry

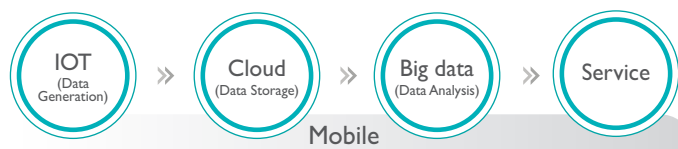
As the market leader of advanced technology, Korea is using IoT to further boost its economic potential

Introduction

In the wake of the mobile revolution, a new revolution called hyperconnectivity is on the rise. And what's emerging in the middle of this transformation is ICBM—Internet of Things, cloud computing, big data and mobile technology. This web of connection among people, things and the online world increasingly enables real-time collection, storage, analysis and utilization of data.

The Internet of Things, or IoT, allows us to collect a wide variety of data that traditional ICT couldn't offer. Other than being the groundwork for ICBM, IoT also provides analysis and utilization of the data collected as well as real-time feedback, thereby serving as a point of connection between the online and offline world.

Therefore, IoT is not just a precursor to the full realization of ICBM, but an essential element to the development and improvement of any product or service.

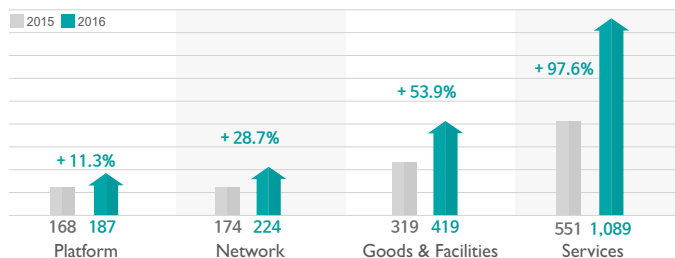


The Rise of Korean IoT Service Providers

According to statistics based on Korean Standard Industry Classification (KSIC), there are 1,991 IoT vendors based in Korea as of 2016, an increase of 779 (or 64.3 percent) from 1,212 in 2015. The aggregated number of Korean enterprises that offer IoT services stands at 1,089, up by 538 (or 97.6 percent) from 551 in 2015.

There are also 374 and 125 companies newly registered under 'Computer Programming, System Integration and Management

Number of Enterprises in the Korean IoT Industry

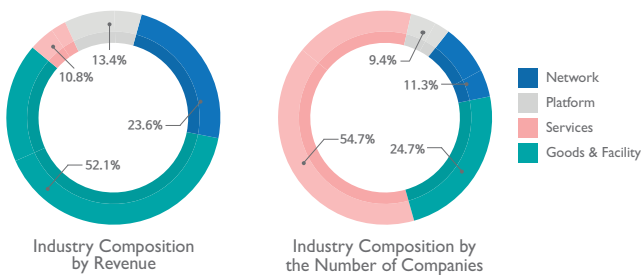


Services' and 'Application Software Development and Supply', respectively, resulting in new players to the IoT services market.

In terms of revenue, hardware solution sales stands at about KRW 3 trillion (USD 2.7 billion), making up for around 52.1 percent of the total revenue generated in the area. Revenue from network solutions stands at KRW 1.36 trillion (or 23.6 percent), followed by KRW 771.57 billion (or 13.4 percent) from platform solutions. While the 1,089 IoT service vendors account for 54.7 percent of total IoT firms, their share in the industry's total revenue is as low as 10.8 percent. And despite burgeoning entrepreneurship in the area, the sum of revenue generated from IoT services in 2016 went up by a mere 23.2 percent from the previous year.

In terms of market structure, Korea's IoT industry is relatively dependent on goods and equipment compared to the global market. According to the International Data Corporation (IDC)'s latest 'Worldwide Semiannual IoT Spending Guide (Jan 2017)', hardware represents the largest (30.6 percent) spending category, but the structure is relatively balanced as services, software and connectivity take up 27.5 percent, 25 percent and 16.9 percent, respectively. This indicates the domestic industry's

Industry Composition



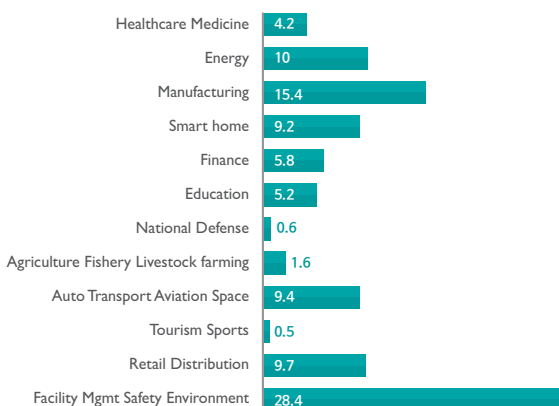
stronger dependence on goods and equipment.

The IDC also forecasted that modules and sensors that connect end points to networks will dominate hardware purchases, as hardware spending approaches USD 400 billion by 2020. Yet hardware will be the slowest growing IoT technology group, according to the market research firm.

As for IoT services, majority of the revenue came from facility management (entry and exit control, facility management, attendance management services, off-site facility control and monitoring, building crack monitoring, etc.), safety (location-based child tracking services, personal safety apps for women, safety management for workers, toxic chemical monitoring at industrial plants, etc.) and environment-related technology (air and water quality monitoring and management, environmental oversight, disaster control for fire and floods, etc.).

Revenue from manufacturing, or KRW 95.51 billion (USD 85.96 million) accounts for 15.4 percent. This is largely attributable to the Korean government's policy effort to promote smart factories, including the Banwol and Sihwa Industrial Complex Smart Factory Cluster established last year.

Revenue of IoT Service Product Groups



Growth of Smart Home Technology

Smart home and energy-related technology is showing the sharpest increase in revenue year-on-year. As mobile telecommunication operators entered the smart home market, the market's total revenue jumped by 54.4 percent, or KRW 20.06 billion (USD 18 million). Energy-related services also saw a 52.3 percent growth from 2015. In a report released in July 2016, the Hyundai Research Institute (HRI) suggested that smart home, smart cities and connected cars are the three most promising

IoT-related products.

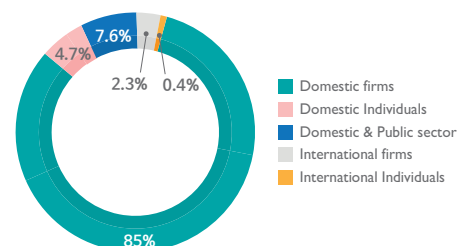
The global market for smart homes is forecast to expand from USD 9.8 billion in 2015 to USD 43 billion in 2020; the number of devices connected to smart homes via the IoT will shoot up to 44.15 million by 2020 from 7 million in 2015. IoT companies are also optimistic about the potential of IoT applications in smart home and energy. Many businesses thus expect smart home technology to be the fastest thriving market in the IoT sector.

B2B Transactions Dominate Korean IoT Market

Currently, business-to-business (B2B) transactions account for more than 80 percent of the IoT services market in Korea, while the share of business-to-consumer (B2C) transactions is a mere 5.7 percent. The B2C market might be in need of market stimulation as revenue generated from two major product groups—healthcare/medicine and smart home—make up for 5.4 and 4 percent, respectively, of the aggregated total.

B2B's dominance in the Korean IoT market is also visible in the customer makeup. Domestic companies represent 85 percent of all consumers, making them the biggest customer group for IoT vendors. They are followed by domestic governments and public institutions at 7.6 percent and domestic individual customers at 4.7 percent.

Customer Composition of IoT Firms



Conclusion

Recognizing its potential as the next engine of economic growth, many countries are now turning to the IoT sector to solve national challenges, reform the public sector and boost private sector competitiveness. With its top-level ICT infrastructure, diverse and innovative startups and tech-friendly people, Korea has strong potential to become a leader in this field. Given the IoT's potential to take the Korean economy to the next level, Korea should utilize the technology as a strategic tool to addressing national challenges such as economic growth, youth employment and other social issues.

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Patrick Johansson
CEO Ericsson-LG Co., Ltd

No foreign company has done business with South Korea quite like Ericsson. The telecommunications company's ties with Korea date back to 1896, just 20 years after its founding in Stockholm, Sweden. It was at this time that Ericsson installed Korea's first magneto telephone switch in the royal palace. Since then, Korea has become an irreplaceable partner for Ericsson and the two have been finding new and innovative ways for cooperation.

The most noteworthy collaboration was in 2010 when Ericsson bought Canadian telecommunications company Nortel's stake in its joint venture with LG Electronics, subsequently changing the name from LG-Nortel to Ericsson-LG (Ericsson currently holds a 75 percent stake, with LG holding 25 percent). With the establishment of the R&D Center in Anyang, Ericsson-LG has been at the forefront of the upcoming Fourth Industrial Revolution, or as CEO Patrick Johansson, likes to call it, "the Fourth Industrial *Evolution*".

Even while talking about something as daunting as technological revolution (or evolution), Johansson's demeanor is affable and engaging. When asked why Ericsson decided to expand its business here, his eyes light up. "It's very apparent that Korea has an advanced and mature market, and we're a company with leading technology. The country's strong R&D infrastructure, strategic location and optimal business environment were some

reasons why we decided to pursue a joint venture with LG."

South Korea has long emerged as a magnet for big R&D spenders like Ericsson-LG, and with good reason—it spends a significant part of its GDP on R&D. According to the Organization for Economic Cooperation and Development (OECD) report on the global state of science, technology and industry, Korea spends 4.29 percent of its GDP on R&D, almost double the average amount spent by other OECD countries. Johansson notes that the company takes full advantage of such infrastructure, with over half of its employees focusing on R&D development at the Anyang center.

The high penetration rate of smartphone usage was another factor that drew Ericsson to Korea. Over 90 percent of Koreans use a smartphone and the number of cellphones being used in the country has surpassed 60 million—that's almost 10 million more than Korea's total population. And it's this kind of environment and local market that has helped the company transform the telecommunications industry as a whole.

"Our vision is to create a truly networked society where every person is

empowered to reach their full potential," says Johansson. Ericsson-LG is well on its way of achieving this vision, being the first network equipment manufacturer to showcase the next-generation network 5G last year. The much-anticipated 5G network is 350 times faster than the current Long-Term Evolution network and the company hopes to launch it to the public in time for the 2018 PyeongChang Olympics.

For Johansson, however, 5G is more than just faster speed; the network creates a new variety of powerful services that blur the boundaries between industries. Case in point, the company worked with Korea's largest wireless carrier SK Telecom and BMW in 2016 to reveal the most advanced 5G outdoor mobility trial, including the first multivehicular 5G trials. They were conducted successfully on a 5G test network installed at the advanced BMW car test track in Yeongjong Island. SK Telecom and Ericsson-LG deployed network slicing and 5G radio network infrastructure to cover a complete track in the BMW driving center. The trial with the connected test cars showed that 5G performance will support V2X (Vehicular Connectivity)

Bridging the Gap

Ericsson-LG is changing the way we communicate by bridging the digital divide



services that require low latency and consistent high bi-directional throughput. Such demonstration of 5G-based connected car technologies marks the very first step towards achieving fully autonomous driving.

As one of the most wired and connected countries on earth, Korea serves as a platform for telecommunications companies to flourish, but it also can cause stiff competition among such businesses. So how does Ericsson-LG rise differentiate itself? By thinking ‘glocal’ and working with local companies both big and small. Most notably, it held an event called

‘ETNS (Enabling The Networked Society)’, offering Korea’s promising startups the chance to work with the company. Participating enterprises were able to present their business proposals directly in front of Johansson. And by thinking glocally, Ericsson’s transition into Korea has been relatively smooth compared to that of other foreign companies. Establishing a joint venture with a Korean company like LG has helped bridge cultural challenges. But Johansson knows there is still room for improvement. “There are always opportunities for more dialogue, especially between the Korean

government and foreign companies. Korea should continue to be open to global businesses and fully utilize its many trade agreements.” He adds that Ericsson-LG is working with agencies like KOTRA to exchange new ideas and help improve Korea’s business environment.

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Upcoming KOTRA Events

Seoul Food 2017

Seoul Food 2017 will be held on May 16 to 17 at the Korea International Exhibition & Convention Center (KINTEX) in Goyang-si, South Korea.



The event is internationally recognized as one of Asia’s premier food exhibitions and has proven itself to be a significant platform for food professionals all over the world. Exhibitors can develop import and export opportunities, demonstrate their products and build business partnerships with prospective overseas buyers. The event also offers one-on-one meetings between exhibitors and potential business partners. There will also be a series of informative seminars on the latest global food trends during the event.

Export Gateway Biz Plaza 2017

On May 18, KOTRA will host the Export Gateway Biz Plaza 2017 at the aT Center in Seoul, South Korea. This is a great opportunity for buyers to meet domestic small and medium-sized enterprises, especially those that are in the early stages of the export process. At this year’s event, as many as 500 Korean vendors will be presenting new and high-quality products from various industries at the showcasing room and during one-on-one business meetings. Executive consultants from KOTRA will also be providing free consultations for participants wanting to export their products.

Korea Service Market 2017

In a bid to foster global business partnerships, Korea Service Market (KSM) 2017 will be held from June 15 to 16 at

the Convention and Exhibition Center (COEX) in Seoul, South Korea. Since its launch in 2009, KSM has become Korea’s representative business-to-business (B2B) consultation meeting. The event provides participants with a highly professional, intimate and collaborative atmosphere that provides plenty of B2B opportunities, most notably in the service industry. Over 200 foreign buyers in the logistics, tourism and finance sectors will be attendance, along with over 600 domestic companies. A consultation booth for companies facing export challenges will be available, and a series of MOU signing ceremonies between Korean companies and foreign buyers will take place on the sidelines of the event.

Policy Options Under Global Economic Nationalism



Over the past decade, the world has experienced a series of economic misfortunes. The subprime mortgage crisis occurred in the United States from 2004 to 2006. It was a nationwide banking emergency. The collapse of the housing bubble made mortgage banks insolvent and caused mortgage delinquencies and foreclosures. This brought about the U.S. recession from 2007 to 2009.

The U.S. subprime mortgage crisis naturally developed into a full-blown international banking crisis with the collapse of investment bank Lehman Brothers in September 2008. Massive bailouts were undertaken to prevent a possible collapse of the world's financial system. Nonetheless, this crisis was followed by a global economic downturn—the so called Great Recession.

The Great Recession occurred during the late 2000s and early 2010s. The scale and timing of the recession varied from country to country. The IMF concluded that it was the worst global recession since World War II.

This global recession critically hit some

weak economies in Europe. For example, the five countries in Southern Europe such as Portugal, Ireland, Italy, Greece and Spain had to struggle with large debts and trade deficits. Their tourism industry was in shambles. Due to the inherent defects of the currency union, the member countries with large trade deficits in the euro zone could not individually implement a monetary policy. So they could not resolve problems of low growth and increasing high unemployment.

While free-market economies are suffering miserably, some socialist countries like China have been flourishing. Luckily or strategically, China capitalized on becoming “the factory of the world”. We have witnessed a grand migration of jobs to China from the rest of the world. Conventional trade theories have never predicted this phenomenon.

According to the conventional simple trade theory, in the world of two countries, two commodities and two factors, the capital-abundant country will export a capital-intensive commodity to the labor-abundant country. Meanwhile, the labor-abundant country will export labor-intensive commodity to the capital abundant country. Thereby both nations can gain mutual benefits by engaging in free trade. These trade predictions hold with a set of assumptions: the two countries share the same technology; labor and capital do not move between the two countries; and the two economies are in full employment. However, these three assumptions are not true in reality.

Another conventional theory says that if commodities are freely traded, wages will be equalized between the two countries. But in reality, wages are rarely equalized because neither the commodity market nor factor market are fully competitive. Under these circumstances, it is meaningless to compare the trade per-

formances of China, the leader of socialist countries, and of the United States, the leader of capitalist countries. More intellectuals have begun to lose their confidence in the traditional trade theories. Instead, many countries tend to take a nationalist position in taking economic policies.

One of the most successful businessmen in the United States, President Donald Trump, must be in the same position. He would not give much credit to the theory per se. He is very practical and pragmatic. He declares that he is the president of the United States and not of the rest of the world. He is very nationalistic in the protection of the U.S. economy. The same thing applies to China. President Xi Jinping is very nationalistic in the protection of jobs and the economy.

Under global economic nationalism, what policy options are available for Korea? If every country declares to take a nationalistic stance, all the countries will be losers eventually. The weakest economy will be the worst loser. Therefore, we have to try to persuade one another not to be nationalistic or protective in trade and investment. Second, we ought to take the give-and-take position which is the principle of reciprocity. Third, we should seek the best possible partners in a multi-country world. Lastly, we should try to export a technology-intensive commodity. In the future, higher technology will be the most important factor in international trade and investment.

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Jeju Island Fights Climate Change through ICT and Smart Grid Projects

Although known as a popular tourist destination, Jeju Island is quickly becoming the forefront of Korea's information and communication technology (ICT) industry to combat a pressing national agenda: climate change.

In 2009, South Korea named smart grid a national priority, designating Jeju Island as a testbed for the national smart grid project. Thanks to its sunny and windy climate, the island is an ideal location for renewable energy technology. The following year, the country announced the National Smart Grid Roadmap, and in 2011, enacted the smart grid support laws for the first time in the world.

Smart grids refer to electric power networks that use the latest ICT to provide high-quality, efficient energy for green growth via grid monitoring, digital power transmission and digitally operated power distribution systems. This includes the introduction of smart meters, in-home displays, electric vehicle-charging infrastructure, wind turbines and photovoltaic equipment.

The backbone of the project depends on the communication system underlying power transmission. Mobile technology is used to deliver smart grid solutions, and home devices like smart meters and smart boxes (portals connected to a wide area network (WAN) to control all household appliances) have been installed in about 6,000 homes on the island. Here are some areas in Jeju that are spearheading the smart grid movement.

Gujwa-eup

Gujwa-eup, a town consisting of 12 small farm villages, is the center of the Jeju Smart Grid project. 6,000 homes in the areas were designated as part of the project. The most conspicuous aspect of this rural town is the fact that some of



Korea's biggest companies are based there. Smart grid project operators are based in this town, with POSCO (formerly Pohang Iron and Steel Company), Hyundai, SK E&C in the west, KEPCO (Korea Electric Power Corporation) in the center and GS, KT and LG Electronics in the east. Electricity charging stations, instead of the conventional gas stations, have also been built to supply energy for plug-in electric vehicles.

The Smart Grid Information Center is also located at Gujwa-eup. The five exhibit booth center explains and promotes the smart grid project through panoramic relief models and LED flow charts of the smart power grid, renewable energy, smart transportation, nuclear power plants and smart places.

Gapa Island

Located off the southwestern tip of Jeju, Gapa Island is home to less than 300 people and famously scenic barley fields. One thing it doesn't have is fossil-fueled cars. An extended target of the smart grid project, Gapa Island is striving to become the nation's first completely carbon free, energy independent and environmentally protected area. So far, electric motorcycles, bicycles and cars have taken over as modes of transportation.

Initially, the area received KRW 99 billion (USD 88.6 million) from KEPCO, KOSPO, Woojin Industrial Systems and

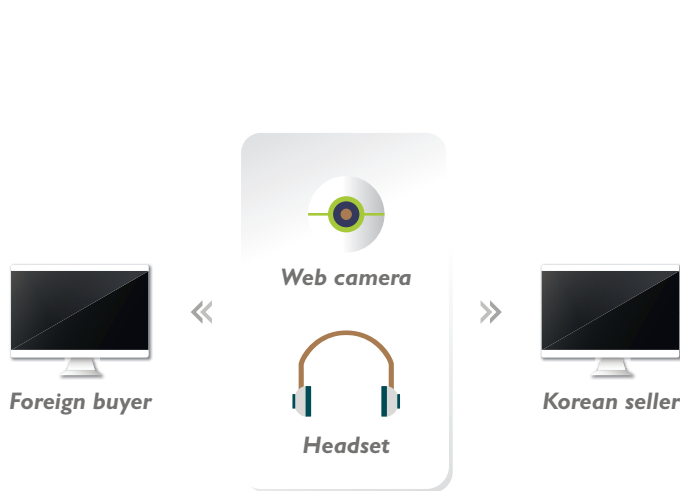
Shin-Kobe Electric Machinery. As the project gained momentum, Gapa received an additional KRW 1.4 billion (USD 1.25 million) in funding from the Seoul government for a 1,000 KWh lithium-ion Samsung SDI battery and a Hyosung 1,000 KW power converter. Agricultural machinery and fishing boats are also under process of electrification and electricity fuel infrastructure is under construction. In addition to the two wind power generators installed in 2012, solar generators have been connected to the smart meter and smart system for real-time billing.







The success of the development of the innovative, large-scale project in Jeju has helped South Korea take a leap ahead in the commercialization of ICT. KT already deployed its Smart Grid Network Operating Centre (NOC) technology in Finland and Uzbekistan and developed pre-commercial services for 50 homes in Bahrain. This year, LG Electronics also introduced smart home appliances based on grid technology. SKT is also planning to expand into the overseas markets for smart grid-related ICT.

Furthermore, with Jeju expanding its commitment to green energy and ambition to be completely carbon-free by 2030, the Jeju Smart Grid project is definitely one that investors need to be on the lookout for.

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What is BuyKOREA?

BuyKOREA is a global B2B online marketplace operated by KOTRA that connects Korean manufacturers and suppliers with buyers worldwide.

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



4STEC is an IT service company concentrating on the development and diffusion of solutions based on Radio-Frequency Identification (RFID) automatic recognition technology. As a service company focusing on people and technology, 4STEC is expanding its business in various areas, such as solution development, web service, convergence, informatization consulting, and server and product sales. Since its establishment in 2013, the company has been providing optimized solutions and services to customers and enterprises in a rapidly changing IT environment.

By continuously developing innovative technology in specialized areas, 4STEC provides high-quality products and services by catering to the needs of each customer. Most recently, 4STEC won a contract for developing programs for Hwaseong City's urban facility management system. It also implemented an integrated records management system for administrative divisions in Busan City. In 2015, the National Assembly library even implemented 4STEC's inventory checker system.



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Economic Indicators

GDP	2011	2012	2013	2014	2015
Nominal (USD million)	1,202,700	1,222,400	1,305,400	1,411,000	1,377,500
PPP (USD million)	1,559,447	1,611,273	1,644,777	1,706,689	1,749,804
GDP Growth Rate (Y-o-Y) (%)	3.7	2.3	2.9	3.3	2.6

Source: The Bank of Korea, March 2017

GDP Per Capita	2013	2014	2015	2016
Nominal	25,998	27,989	27,222	27,633
PPP	33,824	35,436	36,612	37,948

(Unit: USD)

Source: International Monetary Fund, March 2017

Foreign Trade	2011	2012	2013	2014	2015	2016
Exports	555,214	547,870	559,632	572,665	526,757	495,426
Imports	524,413	519,584	515,586	525,515	436,499	406,193
Trade Balance	30,801	28,285	44,047	47,150	90,258	89,233

(Unit: USD million)

Source: Korea International Trade Association, March 2017

KRW-USD Foreign Exchange Rate	2012	2013	2014	2015	2016	February 2017
	1,126.9	1,095.0	1,053.2	1,131.5	1,160.5	1,144.9

(Unit: KRW)

Source: The Bank of Korea, March 2017

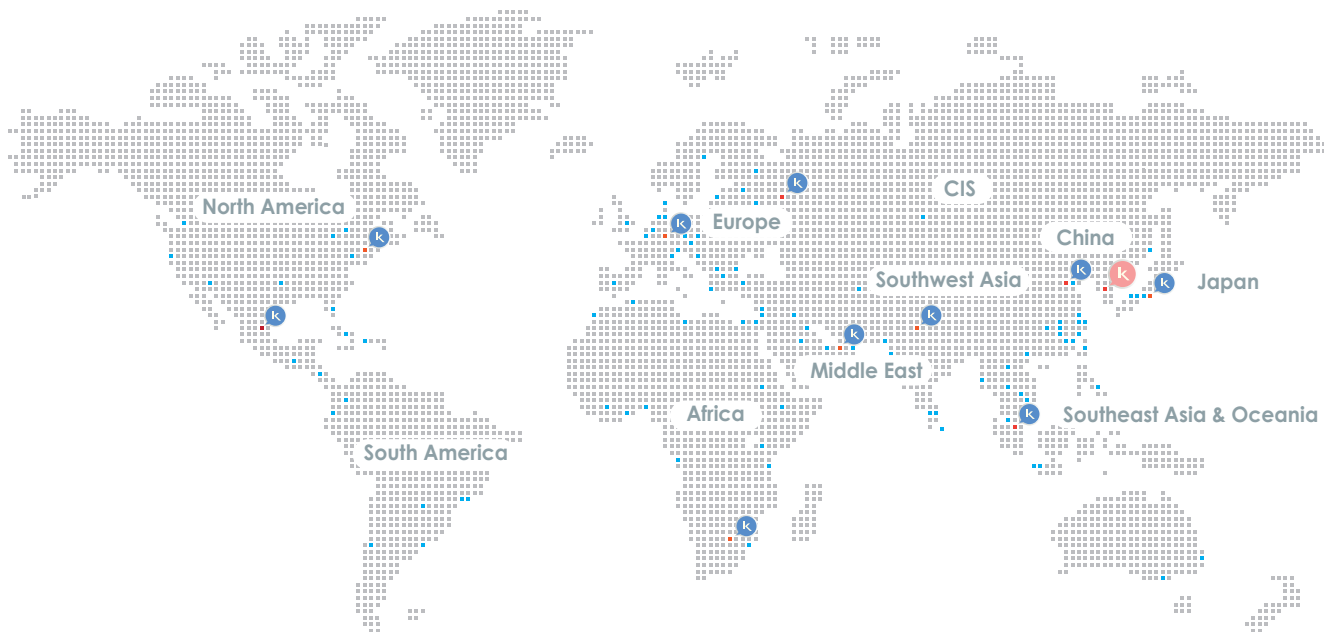
Balance of Current Account	2012	2013	2014	2015	2016	January 2017
	50,835.0	81,148.2	84,373.0	105,939.6	98,677.4	5,277.8

(Unit: USD million)

Source: The Bank of Korea, March 2017

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-KOTRA has 126 overseas offices and 10 headquarters worldwide



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Tel. (82-2) 3460-7837 | **Fax.** (82-2) 3460-7920 | **E-mail.** ikonline@kotra.or.kr
Publisher. Kim Jaehong | **Director.** Park Eunah | **Editor.** Esther Oh
Designer : Lee Yeonsoo | Printed by Hwasin Munhwa Printing Co., Ltd

Clean KOTRA, Green KOTRA