

# kotra EXPRESS

## KOREA'S WEARABLE TECHNOLOGY INDUSTRY

### Success Story **Ben Eum**

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**Element AI**

February 2020

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## Foreign Direct Investment

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### FDI PLEDGES TO SEOUL TOP USD 10 BN FOR FIRST TIME IN 2019

The amount of foreign direct investment (FDI) pledged to Seoul exceeded USD 10 billion for the first time last year as the popularity of K-beauty products drove investment in manufacturers, the city government said Jan. 6.

Seoul received a record USD 10.1 billion worth of FDI commitments in 2019, compared with the previous record of USD 9.6 billion in 2016, according to the Seoul Metropolitan Government.

From the previous year, the amount of FDI pledges increased 12 percent, or USD 1.1

billion. The city said the growth was due to both new investors and increases by existing investors.

New investment jumped 16 percent on-year to USD 3.7 billion, while that of existing investors rose 11 percent in the same period to USD 6 billion.

The city government said it plans to open a help desk to help foreign investors and hold 10 rounds of overseas investor relations meetings to attract more investment.

### SF MARINA SWEDEN, TO BUILD UP A FLOATING PONTOON MARINA SYSTEM NEAR ANSAN

The city of Ansan announced on Dec. 18 that SF Marina, an advanced floating solution company headquartered in Sweden, unveiled plans to build up an offshore town made of a floating pontoon marina system alongside the Korea's western coastline.

A city official said, "The announcement of the floating village project this time appears to be a gesture to reaffirm the investment agreement reached at the EU Investment Seminar held in Paris in October 2018," and added, "It

is highly likely that SF Marina will hand out a draft for the USD 100 million plan to the city of Ansan early next year, though we haven't heard any details yet. I think the village will settle in the nearby town of Daebu island."

Seeing it as a significant contributor to the local economy, the city is looking forward to launching the project, affirming plans to review the plan and take all necessary administrative steps to execute the project.

## Trade & Commerce

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### BEAUTY GOODS EXPORTS TO JAPAN UP NEARLY 30 PCT DESPITE TRADE ROW

S. Korea's exports of beauty products to Japan advanced nearly 30 percent in the first 11 months of last year, data showed Jan. 5, despite the ongoing bilateral trade row stemming from their shared history.

Asia's No. 4 economy shipped USD 370 million worth of beauty products to Japan in the January-November period of 2019, according to the report released by KOTRA, which cited

the latest data available from IHS Markit.

Despite the frayed relations, demand for S. Korean cosmetics still gathered ground last year on the back of the rising popularity of Korean drama, pop, film and other cultural contents, according to KOTRA.

The market for beauty products in Japan is also set to grow sharply this year in line with the 2020 Tokyo Olympics.

### S. KOREA'S MACHINERY EXPORTS TOP USD 50 BN MARK FOR 2ND YEAR

S. Korea's annual exports of machinery surpassed the USD 50 billion threshold, data showed Dec. 29, 2019, standing as the second-largest export item for Asia's No. 4 economy after semiconductors.

The country's outbound shipments of general machinery were estimated at USD 52.5 billion in 2019, according to the Ministry of Trade, Industry and Energy.

The country's machinery exports surpassed the mark for the first time last year by shipping USD 53.5 billion, up 10 percent from a year earlier.

"It is significant that the machinery segment posted exports above USD 50 billion for the second consecutive year amid the trade dispute between the United States and China," an official from the ministry said. "S. Korea will continue to beef up the competitiveness of the area in 2020."

**Industry**

**SALES OF SHINSEGAE DEPARTMENT STORE'S GANGNAM BRANCH SURPASS KRW 2 TN IN 2019**

Shinsegae Department Store, one of S. Korea's leading retailers, said Jan. 7 that its outlet in Gangnam, southern Seoul, reported KRW 2 trillion (USD 1.7 billion) in accumulated sales last year.

It marks the first time for a single department store branch to achieve the milestone, the company said.

Lotte Department Store, another leading player, earlier said its branch in Myeong-

dong in downtown Seoul generated KRW 1.8 trillion in sales in 2019.

Shinsegae attributed its stellar performance to increased visits by foreign shoppers as its Gangnam outlet is adjacent to a number of five-star hotels, including the JW Marriott Gangnam.

The country's three major players — Lotte, Hyundai and Shinsegae — account for about 80 percent of the sector's sales in the country.

**SAMSUNG ELECTRONICS RANKS 18TH WORLDWIDE IN MARKET CAP**

Samsung Electronics Co., the world's largest memory chipmaker, saw its market cap vault 10 notches over the past year to rank 18th worldwide, as the S. Korean tech giant has continued to build up gains on a rosy earnings outlook, data showed Jan. 12.

Samsung's market cap reached USD 301.65 billion as of Jan. 9, up USD 95.08 billion from

Jan. 2, 2019, according to the data compiled by Bloomberg.

Over the cited period, Samsung, also the world's largest smartphone maker, rallied 51 percent to close at KRW 58,600 on Jan. 9. On Jan. 10, the tech giant reached a fresh all-time high of KRW 59,500.

**Government & Policy**

**MOON STRESSES GOV'T ROLE IN FOSTERING AI SECTOR**

President Moon Jae-in said Jan. 16 that his government will make every effort to promote South Korea's artificial intelligence (AI) industry on the basis of its information technology prowess.

Moon emphasized that the country has great potential to become an AI powerhouse at a meeting held at the Electronics and Telecommunications Research Institute (ETRI) inside the Daedeok Innopolis, the state-funded AI technology research hub of S. Korea located in Daejeon.

"(We) should secure future jobs with the power of information and technology and advance the era of an innovative, inclusive nation," Moon said. He added that S. Korea has "adequate potential to make a leap as an AI power," citing its advanced IT sector.

The president said the government will take the initiative in efforts to nurture AI-related unicorn companies in the nation via support for the training of manpower, and stressed, "Pulling off the potential into a reality is the task the government should do."

**S. KOREA TO SHARPLY JACK UP SPENDING FOR ECO-FRIENDLY AUTO SECTOR IN 2020**

S. Korea said Jan. 3 that it will allocate more money to foster the eco-friendly automobile market this year in a long-term plan to have such cars take up a quarter of all car exports by 2030.

To further foster the segment, S. Korea said it will allocate KRW 950 billion (USD 821 million) this year to provide customers with subsidies and install more charging stations across the country, according to the Ministry of Trade, Industry and Energy. The budget marks a 60 percent increase from 2019.

Another KRW 204 billion will be spent to support local companies' research and development

projects in 2020, up 54 percent from a year earlier. S. Korea will also help local auto parts makers with various financial incentives, including subsidies and tax deductions.

"While the global automobile industry is facing a setback amid the growing protectionism and slowing demand, the market for eco-friendly cars is nevertheless expanding at a fast pace," an official from the ministry said.

Exports of eco-friendly cars, including electric and hybrid models, reached 249,000 units in 2019, rising 25 percent from 196,000 units posted a year earlier.

# Market Trends and Outlook of Wearable Technology in Korea

## Introduction

With the remarkable growth of the Internet of Things (IoT), connecting more and covering wider “things,” wearable devices which enable data exchange between a network and a user, are thought to be a key growth driver that can lead the future tech trends.

Wearable devices are also known as wearable computers as they are one of the most adopted IoT system, allowing objects to exchange real time data through the wireless network with another connected devices.

What’s now called wearable computing technology was first conceptualized by a research team at the Massachusetts Institute of Technology (MIT) in the 1950s. The origins of pre-modern wearable devices actually date back to the 1960s, when the prototype was created in the form of the calculator watch or cameras strapped on shoes. Decades later, they have evolved into technologies applicable mainly in the fields of military or R&D.

Since then, wearable technology has become pervasive due to the incorporation of it in daily life. The widespread adoption and availability come from ubiquitous computing capabilities which encompass the development of smart devices, smart environments of an embedded wireless system, along with longer battery capacity. The most widespread wearable devices so far have been smart watches or devices

worn on the body like accessories, but the wide variety of VR/AR or bio-health applications for the technology such as patches or implantable types are highly likely to drive the market, diversifying the product portfolio.

## Types and features of wearable technology

Wearables are segmented into four different product categories. Depending on its design and purpose, each represents a specialized computing function, i.e., portable personal technology is easily carried like mobile devices or accessories. Smart clothes are digital devices incorporated into fabric, and some types are strapped or typically worn on particular parts of the body. Dermally-implanted sensors (literally embedded under the skin) or smart pills administered like medication are classified as transplantable products.

Wearable devices must be comfortable and have a snug fit just like one’s own clothing (comfortability). For instant interaction and agile feedback, a networking platform that connects the users and devices must always be open (invariability). Any physical/emotional inconveniences or bio-insecurity caused by electromagnetic waves must be blocked (safety). Without invoking any sense of cultural aversion, the technology should well consider socio-cultural context (sociality).

<Table 1> Types of wearables

Accessory	Digital clothing	Patch	Implantable
<ul style="list-style-type: none"> <li>- Smart jewelry or digital garments worn on the body</li> <li>- Smart watches, Smart eye wears</li> </ul> 	<ul style="list-style-type: none"> <li>- Smart outfits, Wearable computers incorporated into clothes (smart textile)</li> </ul> 	<ul style="list-style-type: none"> <li>- Body-attachable patches</li> <li>- Electronic skin patch sensors and actuators</li> </ul> 	<ul style="list-style-type: none"> <li>- Embeddable implants</li> <li>- Implantable sensors or devices</li> </ul> 

## Market trends

A global ICT advisory company Gartner, Inc., predicted that consumers across the world are likely to spend as much as USD 52 billion on wearable technologies this year, a 27 percent jump from USD 41 billion in 2019. Much of the spending, in particular, appears to go to smart watches (34 %) and smart clothes (52 %) in the year 2020.

Plus, the ever-advancing nanotechnology is forecast to enable wearable electronics (almost one out of ten) to be small enough to remain invisible by 2023.

IDTechEX, a research group, said that the market size of wearable devices would reach about USD 150 billion in 2026 from 30 billion in 2015, showing an annual average growth rate of 15.8 percent.

Currently, Apple ranks at the top (46%), followed by Samsung Electronics (13%) in terms of the global market share for smart watches, the most popular type of wearable gadgets. Google's latest acquisition of Fitbit for USD 2.1 billion is further expected to heat up market competition in the coming years.

**<Table 2> Global shipments of wearables and market size by type**

(Unit: 10,000 pcs., %)

Products	2018		2022	
	Shipments	Market share	Shipments	Market share
Smartwatches	7,280	58.2%	12,020	53.3%
Wrist bands	4,650	37.1%	4,700	24.7%
Smart clothes	280	2.2%	910	4.8%
Ear wears	210	1.7%	1,280	6.8%
Wearable robotic devices	70	0.6%	60	0.3%
Others	20	0.2%	20	0.1%
<b>Total</b>	<b>12,530</b>	<b>100.0%</b>	<b>18,990</b>	<b>100.0%</b>

Source: IDC

S. Korea's technological expertise level (an indicator of how competitive a country's technology is) for producing wearables was assessed to be 84.5 percent.

The global digital divide index which demonstrates the technology gap between nations shows the EU at 9.0%, Japan at 12.2%, S. Korea at 15.5% and China at 15.9% (U.S. = 0%), which implies that Seoul is almost 1.2 years behind the U.S.

**<Table 3> Technological expertise level for wearables by country**

Category	Wearable Devices	
	Technological expertise level (100%)	Digital divide (0 years)
S.Korea	84.5	1.2
U.S.	100.0	0.0
Japan	87.8	0.9
China	84.1	1.3
EU	91.0	0.7

Source: The Digital Divide Report (IITP, 2019. 7)

## Conclusion

The past few years have witnessed rapid development and the introduction of new technologies such as IoT, artificial intelligence and big data analytics. This new trend has many people believing that wearables will replace other mobile devices and become the next key hardware. Kickstarted by global ICT pioneers like Google and Apple, wearable technology is now commonly found in almost every business landscape—fashion, wellness, healthcare, entertainment, public safety and etc.

While ensuring that the market for smartwatch, the first big wave of wearable technology to catch on with consumers, remains sustainable, S. Korea needs to establish a longer term masterplan which requires bigger infrastructure and investment in technology, particularly in the fields of patch-type sensors or implantable devices. In addition, the government should provide policy support to help startups and SMEs preparing to expand to overseas markets to boost their competitiveness in the global business landscape.

### Reference

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# Pyeongtaek BIX:

## Smart City Creation Project to be Accelerated



The Yellow Sea Free Economic Zone (YESFEZ) will implement a smart city system to enhance the competitiveness of the Pyeongtaek Business and Industry Complex (BIX).

YESFEZ announced last June that Pyeongtaek BIX would remotely provide 24-hour public services related to traffic, crime, and disaster prevention in connection with the Pyeongtaek Integrated Smart Control Center, which has introduced construction, information, and communication convergence technologies as well as integrated broadband information networks.

The Pyeongtaek BIX Smart City Creation Project will be carried out in accordance with the Act on Smart City Development and Industrial Promotion, which allows the construction of a smart city in a newly developed district with a total area of more than 300,000 square meters.

Project objectives include the creation of a comprehensive communication network connecting all parts of the district

in consideration of the future expansion of communication facilities as well as the provision of services including public transportation information (BIT), parking violation control, public area safety monitoring, CCTV monitoring to prevent disasters, traffic control, and emergency situation detection.

First, information kiosks will be set up at 36 bus stops to provide bus arrival information in real time. The electronic displays (variable message signs) will provide real-time traffic information based on current road condition information collected from nearby areas.

In addition, real-time signal controllers will be installed at 14 intersections, along with CCTVs to monitor road traffic and congestion in real time for emergency situation control at major intersections.

Furthermore, over 26 CCTVs will be installed along streets as well as in parks and residential areas where crime prevention measures are required. In the event of an emergency, real-time images can be automatically transmitted to the Pyeongtaek City Integrated Smart Control Center, which can connect to 112 and 119 services so that police and ambulance personnel can be quickly dispatched to the scene.

The project is also expected to help with preventing disasters and enhancing the safety of the city through the installation of CCTVs for disaster monitoring at disaster-prone detention ponds.

The Gyeonggi Urban Innovation Corporation, which is implementing the project, plans to achieve completion by this year. YESFEZ Commissioner Hwang Seong-tae expressed his anticipation for the project, saying: "With the creation of a smart city that will provide services using various advanced technologies such as 'ubiquitous' technology, the Pyeongtaek BIX will not only function as a production base, but also provide a safe workplace and a pleasant residential environment for those working in the district. We will continue our efforts to make YESFEZ a special economic zone that can lead the Fourth Industrial Revolution in Korea."

The Pyeongtaek BIX is being constructed on 2.04-million-square meter site near Pyeongtaek Port, and the lots inside the complex are currently being sold at a prices 20-25% lower than those in nearby industrial complexes.

# Invest Korea Market Place

Invest Korea Market Place (IKMP) is an online business matching platform available on Invest KOREA's website with information on over 280 Korean companies seeking to partner with foreign investors. This month, KOTRA Express introduces some outstanding companies in Korea's artificial intelligence (AI)/Internet of Things (IoT) sectors.

## COMPANY A



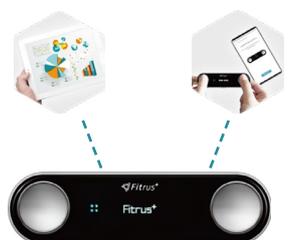
AI Tutor

Investment Requirement		Company Profile	
<b>Amount</b>	USD 3 million	<b>Patents and certificates</b>	Applied for a patent for a system and a method for language education
<b>Investment Structure</b>	Minority	<b>Financial Performance</b>	(Sales) USD 0.45 million (in 2018)

### Investment Highlights

The current English education system places more emphasis on the ability to express and practice English than understanding it as compared to the past. That is, the need for after-school activities has increased as the learning of conversational English becomes more important. However, education centers are limited in each region. Moreover, the number of highly qualified teachers is relatively low in conjunction with the increasing burden of tutoring fees. In this context, the company's AI solution will increase potential business opportunities.

## COMPANY B



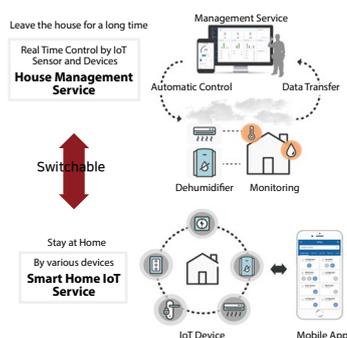
Product example

Investment Requirement		Company Profile	
<b>Amount</b>	USD 3 million	<b>Patents and certificates</b>	Completed registration of a patent for a method and apparatus for calculating body health index
<b>Investment Structure</b>	Minority	<b>Financial Performance</b>	(Sales) USD 0.60 million (in 2018)

### Investment Highlights

The company is devoted to the development of its own innovative healthcare hardware and software, aiming to provide users with the right health information through devices and data analysis. As a result, it has successfully developed a portable body fat analyzer, which can be used anytime and anywhere, with its own algorithms for improved accuracy. It began to enter overseas markets, starting with Japan, and was acknowledged for its technical power by HighTech XL in Europe and Plug and Play in the U.S. It is also preparing for an overseas startup audition program and a reality TV show (Shark Tank) to promote its products and increase sales.

## COMPANY C



Smart home service solution

Investment Requirement		Company Profile	
<b>Amount</b>	USD 2.5 million	<b>Patents and certificates</b>	Registration of 27 patents related to the supply of smart home service by linking standalone hubs and IoT devices
<b>Investment Structure</b>	Minority (Financial investment)	<b>Financial Performance</b>	(Sales) USD 4.51 million (in 2018)

### Investment Highlights

Our product is a key technology in the intelligent information industry that leads the Fourth Industrial Revolution including AI, cloud computing, big data and information security. Overcoming the limitations of existing industries and services, IoT is emerging as a key tool for resolving matters such as low-growth, aging, and energy depletion. In this context, there is an active movement to combine IoT across industrial settings. The Ministry of Science, ICT and Future Planning expects the value of the IoT market to increase to KRW 22.8 trillion in 2020.

For more information, please visit the IKMP page on [www.investkorea.org](http://www.investkorea.org).

# Gwangju Metropolitan City



In order to transform Gwangju Metropolitan City into a leading city of the artificial intelligence (AI) industry that will support the fourth industrial revolution in South Korea, Gwangju is now focusing on human resources (establishment of an AI graduate school of the Gwangju Institute of Science and Technology), budget, and integration, which are the keys to the artificial intelligence industry.

Based on building relationships and cooperation with AI experts at home and abroad, securing the central government's fund (approximately KRW 62.6 billion) for 2020 and removing a green belt area (development restricted) of the Cheomdan Complex, we have announced our vision and promotional strategies for the Gwangju Intelligent-Centric Industrial Convergence Complex which will be a central complex of the AI industry.

In addition, we will accelerate the process of constructing the Gwangju Artificial Intelligence Complex by establishing of core infrastructure such as the 'AI Industrial Convergence Agency' in cooperation with the Ministry of Science, Technology, Information and Communication (MSIT) at the Cheomdan Complex.

Based on a regulation free zone for special low-speed autonomous vehicles, the city will be able to increase its competitiveness by combining the automobile and AI industries. By linking AI with industries like energy, health care, cultural contents and more, an AI-based industrial innovation ecosystem will be promoted in Gwangju City.

# Hope for a Big Turnaround

Still lingering in the fresh new year mood, the Korea Customs Service (KCS) released some surprising trade statistics that joyfully awakened the nation, which has been suffering from a prolonged export demise for more than a year. According to KCS, Korea's exports for the first ten days of January 2020 showed a remarkable 5.3 percent increase compared to the previous year at which it decreased by 5.7 percent. This was exuberantly taken as a sign of ending a 13-month long streak of negative growth from November 2018.

One of the most fascinating facts was that the top two export items of semiconductors and petroleum products increased 11.5 percent and 30.6 percent, respectively, for the cited period. Such perennial top two export items showed particularly poor performance in 2019 with growth rates of -26.5 percent and -12.8 percent, respectively. Another optimistic fact is that imports stopped declining and began to rise in almost three quarters. Imports increased 7.6 percent for the first ten days of 2019. This is especially exciting because imports in Korea have usually been a precursory indicator of what's to come in the near future. If imports increase, it usually means future exports and the economy will also bounce up because approximately four-fifths of Korean imports are raw materials and machinery, which play a crucial role in producing exports and activating the economy. Although this is merely ten-day data, it was more than enough to satisfy a nation that has been long haunted by export disappointment.

Undoubtedly, exports, being the key element of the Korean economic revival, the 2020 government plan for economic policy places the main emphasis on the export recovery. To achieve the goal of export promotion, the plan embraces several key projects among which are the appropriation of KRW 240.5 trillion, or an equivalent to USD 210 billion, to export finances. On top of this, the plan tries to give a new impetus to the New Southern as well as the New Northern Initiatives to elevate to a higher degree of cooperation and collaboration in those areas. In particular, the plan is targeting to achieve tangible results in the nine-bridge project as part of the New North Initiative. The nine-bridge project is to embark simultaneously on economic cooperation with Russia in the nine fields of natural gas, ports, electricity, the north-west passage, shipbuilding, industrial complex, agriculture and fisheries.

Other noteworthy projects in the plan are the strategy of promulgating exporting services, which is scheduled to be announced in March; and the strategy for the Proliferation of K-Brands, which is expected to be released in the first quarter of 2020. To be sure, exports in services and K-Brand merchandising could be new powerhouses for Korean exports in the future, and that is why many anticipate epoch making



contents in the forthcoming strategies.

With such excellent plans and strategies on the backdrop, however, it should be remembered that it was not the lack of plans or strategies that recently hampered exports of Korean firms. There were more than enough plans and strategies even in 2019 when Korea suffered unexpected decline in exports. It just meant that the government plans or strategies were just supplementary, not necessarily leading to the final target of export performance. They just gave direction or guidance for better export outcomes of the firms. What really accomplishes excellence in exports is not a government plan, but the competitiveness of the firms. When it comes to export performance, what tells the real story is nothing other than corporate competitiveness in the quality, design, follow-up services and price. Competitiveness comes not from dry plans or strategies but from human desire and ambition.

There is an old Chinese saying which says you can lead a horse to water, but you can't make it drink it. It is clear that the government can lead firms to a better environment, but it can't make them achieve better results unless firms desperately want to. Everything rests upon the business' mindset. If a strong business mind is permanently bonded to efficient government plans, the ten-day fairy tale of export statistics can be extended to years and decades of an export boom.



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

## ONE-ON-ONE WITH BEN EUM

*Technology Industry Lead & Principal Director of North Asia,  
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### Realizing the Potential of AI at the Enterprise Level

*KOTRA Express talks to Ben Eum, Technology Industry Lead & Principal Director of North Asia at Element AI Korea, as he offers insight into Korea's AI industry and shares his experience doing business here.*

Upon graduating from Seoul National University with a B.Sc. in material science & engineering, Ben Eum spent about seven years working for IT companies and technology consulting firms such as LG-EDS, IBM and Accenture. He spent another nine years working in global strategy consulting firms such as Booz Allen Hamilton and Monitor Group, serving many large Korean enterprises and multinational companies in Asian countries, and equipped himself with strategic and operational expertise, particularly related to new business development, investment, M&A, etc. in industries like manufacturing, petrochemical and energy.

While working as managing director of OpenTide, an internal consulting arm of Samsung Group, he discovered that there was a new breed of companies—the so-called technology giants and startups—who run their businesses and grow rapidly in a very different manner from the traditional industries. Excited to take a chance and transition from the “advisory” business to a fast-growing IT startup, he took a position as head of corporate development at Kakao Corporation to contribute his skillsets and knowledge as well as to learn the mechanisms of operations and growth in this new type of company.

Eum realized the potential of artificial intelligence (AI) technologies while he was part of the AI business division at Kakao, and eventually joined Element AI as a principal director of the North Asian region in February 2018. Eum says, “Looking back on my career, I’ve walked the path to become a strategy and business development expert who understands the different worlds of business and technology, and can now contribute to realizing the full potential resulting from the combination of the two.” Read on to learn more about his experience doing business here.

#### How did you become interested in your industry?

I would say there were three key moments which got me interested in the potential of AI to impact our industries and society as a whole. The first moment dates back to the ImageNet competition in 2012. Since the 1950s when the concept of AI was born, 70 years passed with a few rises and falls of technologies, and finally in 2012, at this competition, AlexNet, which was powered by the Convolutional Neural Network (CNN), dramatically heightened the accuracy of image recognition, which had stayed below 75 percent for previous few decades, to 85 percent. This triggered explosive interest in the adoption of deep learning technologies in real-life situations. What interested me personally is that machines finally showed the potential to outperform humans in tasks which were traditionally thought of as the human’s territory: vision. It led me to think about the uniqueness of deep learning technologies as compared to previous technologies we adopted in our businesses and society.

The second moment was, of course, the “Google DeepMind Challenge Match” that took place in Seoul in 2016. It was a five-game Go match between Lee Sedol, the 18-time world champion, and AlphaGo, a computer Go program developed by Google DeepMind. AlphaGo won all but the fourth game and the match has been compared to the historic chess match between Deep Blue and Garry Kasparov in 1997. But what amazed me was not the result of the game itself. It was Lee Sedol’s comment following the match, when he said, “I have grown through this experience. I will make something out of it with the lessons I have learned. I realize it was really a good choice, learning to play Go.” To me, this comment was refreshing to hear because I thought, finally we’re encountering technologies with the potential to not only learn

from us but also to teach us and augment humankind, unlike any other technology from the past.

The third moment was when I joined the AI business division at the Kakao Corporation in January 2017. While formulating AI strategy and business development plans for the Kakao AI business and products, I was able to dive deeper into AI technologies like voice recognition, NLP, vision, time series—coming to the realization that the business implications of AI technologies could be huge, not just from just the “product AI” perspective but also from the “enterprise AI” perspective. All the traditional technologies we employed in the business context have the nature to speed up calculation, but this new breed of technologies, has the possibility to support our business in a different context: prediction.

### Can you tell us about Element AI and its history?

Element AI is an artificial intelligence company based in Montreal, Quebec in Canada. Montreal is a major technology development hub with access to world-class talent and research facilities in the AI field. Element AI was founded by serial entrepreneurs Jean-Francois Gagne and Nicolas Chapados, along with Yoshua Bengio, a co-father of deep learning technology and a Turing Award (the Nobel Prize of Computing) winner in 2018 along with Geoffrey Hinton and Yann LeCunn. Our vision is to enable large enterprises around the world to tackle difficult problems by providing services and developing products that solve their AI-related needs. We bring together cutting edge researchers, industry experts and leaders looking to assist in implementing an “AI-First” strategy and introduce the possibility for any organization to develop their own AI strategy.

Since its foundation in October 2016, Element AI has grown very quickly and we now have five offices around the world: two in Canada (Montreal-HQ, Toronto), one in the UK (London), and two in APAC (Singapore, Seoul). Starting with five co-founders, we’ve reached up to approximately 500 full time employees around the world within three years after establishment, and more than 100 among them are world-class, seasoned researchers and engineers in machine learning and deep learning technologies. The company has raised a total of CAD 340 million (USD 257 million) since its inception, including its large CAD 102 million series A round in 2017.

### What made Element AI establish a branch in Korea?

I believe Korea has many attractive characteristics as a country with its vibrant culture, innovative spirit, and strong foundation as one of the most advanced manufacturing hubs in the world.

There were several factors driving Element AI’s decision to establish a branch in Korea. First of all, large Korean conglomerate Hanwha Group, invested in the series A funding round of Element AI in 2017, allowing the Element AI team to meet various stakeholders and business subsidiaries in the

Group. Hanwha also introduced the team to key executives in other large enterprises in Korea, giving the team an opportunity to gain a good understanding on Korea’s market potential. Now, Element AI is participating as a technical advisor in the AI Alliance Fund—a fund jointly established in November 2017 by Hanwha Asset Management, SK Telecom and Hyundai Motor Company to invest in startups working on AI and smart mobility.

Secondly, Korea has a very dynamic innovation ecosystem equipped with world-class digital infrastructure. The country has been ranked No. 1 on the Bloomberg Global Innovation Index from 2014 to 2019 (No. 2 in 2020, following Germany)—the index covers 60 countries and consists of seven evaluation categories of productivity, R&D intensity, manufacturing capacity, high-tech density, higher education efficiency, concentration of researchers, and patent status. Maturity in all categories are critical in assessing the readiness of a country to experiment and implement AI, hence being another reason why Korea was considered to be a good fit.

Third, a more subjective and qualitative factor could be the cultural aspect. I believe the Korean people are very open-minded and collaborative when it comes to cooperating with foreign companies, and Korean companies have established themselves as credible business partners globally for decades. I believe trust, credibility and an open culture played an important role in Element AI’s decision to expand to Korea.

### What are the advantages of doing business in Korea?

As I mentioned above, Korea has consistently shown its strengths not only as a center of innovation but also as a leading country in advanced manufacturing with new technology adoption. There are lots of companies and conglomerates in Korea with global and regional footprints at the stage where they feel the need to experiment and adopt AI technologies including deep learning in their business processes to drive next level innovation and disruption, and to gain sustainable competitive advantages over their competitors. But the reality is that the resources required to act on this initiative, such as seasoned machine learning and deep learning researchers as well as engineers are so scarce, and it’s nearly impossible for Korean companies to internalize this specific capability; hence creating business opportunities



for global companies like Element AI to participate and collaborate with Korean companies for mutual benefits.

But the AI journey, especially in the enterprise sector, takes more than just AI researchers and engineers. In a sense, mature and advanced engineering capabilities are even more important in driving the realization of the potential of AI technologies in enterprises, and Korea is one of the few countries with top-level engineering capabilities and trained human resources.

### **What advice would you give companies from Canada seeking to do business in Korea?**

I am a little bit cautious here because I'm not an expert myself in the relationship between Korea and Canada. But one important aspect I'd like to stress is the culture. Understanding the differences in culture—not just the culture in general but also the cultural aspects of business practices are critical in building mutual trust. No long-term business relationship is possible without trust.

I don't like to generalize, but the business practices and the culture behind such practices in Korean companies must be very different from those in Canadian companies, such as perhaps the speed and the structure of decision making, etc. It's important for foreign investors/companies to be prepared in both the emotional and logical sense to overcome the challenges stemming from these differences.

### **How can Korea become a more ideal business environment for foreign companies like Element AI?**

Speaking solely from my perspective, the regulatory policies and guidelines have huge impacts on the business as well as the overall business environment. One of the key factors with a huge dependence on regulation is access to data. As you know, data access—not only the access itself but also the general preparedness in terms of data for AI applications—poses an important challenge in any AI company trying to work with their clients. Especially in the case of foreign companies like Element AI, the situation is often times more difficult due to the requirements to share the data from client businesses to cloud platforms of foreign service providers outside of Korea.

Given the fact that every country is preparing its infrastructure and regulation system to properly adopt AI in every aspect of the economy, industry and society, it's critical for Korea to establish the business, regulatory and cultural environments to experiment, develop and deploy artificial intelligence systems in a safe, scalable and sustainable manner. Thus, developing a forward-looking strategy and regulations to allow access to data and to promote the sharing of data, will provide a better environment for foreign AI companies like Element AI to actively participate and invest in the Korean market.

### **What Korean companies/government agencies do you work with to strengthen your business partnerships?**

Since we officially established the Korean branch in December 2018, we've built relationships with multiple stakeholders in Korea with a clear focus on industries in the private sector such as manufacturing and financial services. Element AI believes it's a good time to start building a close relationship with Korean government agencies and the public sector, considering the readiness of Korea in general; we also understand that the Korean government announced its "National AI Strategy" at the end of 2019.

I'm not at liberty to disclose our client information but you can find news about our strategic partnerships or relationships with Korean companies such as the AI Alliance Fund, Carrot Insurance (an insurance joint venture between Hanwha General Insurance and SK Telecom), Shinhan Financial Group, and LG Electronics. Also, we are considering participating in several AI associations in Korea from 2020, with the goal of expanding our relationships in the industry and helping Korea connect with foreign countries in its endeavor to lay the foundation for AI-based innovation.

### **What are some of Element AI's future plans in terms of doing business in Korea and in Asia?**

Currently, Element AI has two offices in the APAC region—Singapore and Korea. The Singapore office serves as the regional HQ in Asia, and the Seoul office covers the North Asian region including Korea, Japan, etc. Element AI's investors and management team believe the APAC market is very important for our growth in the future, and has plans to grow our capabilities in the region, spanning from business development and sales to engineering and research.

Korea and North Asia, I believe, will be the region to showcase to the world the true potential of AI in the enterprise context, and thus, we're going to be constantly expanding our relationships with large enterprises and government agencies to support a healthy ecosystem consisting of private sector enterprises, government agencies, research institutes and startups. In doing so, I believe Element AI will play a pivotal role as a thought leader and practitioner, positioned as an AI service and solution provider with world-class research capabilities, products and platforms.

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# Chopsticks, Designed to be 'Held'

## Reincarnated into Fancier and More Reliable Forms

*There is a Korean children's song that uses the chopsticks as a motif, which goes "Which two things are the same? Two chopsticks in a pair are the same!" Regardless of a person's age, chopsticks are the first things that come to mind for Koreans when asked to find two identical things that come in a pair. Chopsticks are widely used around the world, by around 30% of the global population. Although the shape of the sticks differs from country to country, one thing remains constant- that they are made of two identical sticks. This seems natural as you need at least two sticks to pick up food.*

### Same Number of Sticks, Different Designs

The factor that influences the design of the chopsticks most is the food. The function of chopsticks changes depending on the properties of the food, and the design of the chopsticks follows its function. For example, Chinese chopsticks are traditionally long and thick. This is because thicker sticks are better for gripping oily food. Also, the length is longer because of the custom of placing food in the middle of the table and transferring it to personal plates. In contrast, Japanese chopsticks are shorter and pointed at the ends. This is due to the fish-heavy diet, requiring the removal of bones.

What about Korean chopsticks then? Korean chopsticks fall in the middle between Chinese and Japanese chopsticks in terms of length, but what matters more than length is the material. The material has to be durable, to withstand use with hot broths and stews, and not stained by food that have been marinated or pickled in sauces. It has to be able to carry a large amount of food, or heavier pieces of food without breaking. This is why Korean chopsticks have long been made with metal. These are the basic designs of chopsticks based on the respective dining cultures they hail from.

### Designed to be 'Held', to be 'Had'

Korean chopsticks have evolved over the years to maximize functionality or efficiency. More importantly, with the Korean diet moving away from the traditional format of rice and soups with every meal, the design of Korean chopsticks has been slowly changing. Chopsticks optimized for different types of food, be it noodles, rice, or oily food, are being introduced. The main idea behind these designs is the maximizing of the 'holding' function according to the properties of the food.

Recent chopstick designs make you want to hold them. When holding chopsticks of various shades and colors, the hand becomes part of the design. It is hard to resist the temptation to own these chopsticks. From earthy designs using materials found in nature, to the use of eco-friendly non-toxic materials such as silicon and corn, chopsticks continue to evolve in the present day. It is a familiar presence that has always been by our side, but reincarnated into fancier and more reliable forms.

Every month, KOTRA Express provides answers to some frequently asked questions submitted by foreign-invested companies in Korea and potential investors.

### Investment-in-kind with domestic real estate



**If a foreigner acquires the existing stocks of a Korean company by means of investing the land he/she owns in Korea, is this recognized as foreign direct investment under the Foreign Investment Promotion Act?**



Yes, because foreigner-owned real estate in Korea falls under “object of investment” as prescribed by the Foreign Investment Promotion Act.

Under the Foreign Investment Promotion Act, the following items fall under “object of investment”:<sup>32)</sup>

- Foreign means of payment as prescribed by the Foreign Exchange Transactions Act or domestic means of payment by the exchange of the said foreign means of payment  
Capital goods
- Proceeds from stock acquisition in accordance with this Act
- Industrial property rights, intellectual property rights as prescribed by Presidential Decree, other technologies thereto, and rights pertaining to the use of such rights or technologies
- Where a foreigner closes his/her own branch company or office in Korea and then converts the branch company or office into another domestic corporation, or where a domestic corporation the stocks of which are possessed by a foreigner is dissolved, the residual property allotted to the said foreigner upon the liquidation of the said branch company, office, or corporation
- The amount of redemption of long-term loans or of other loans from foreign countries
- Stocks prescribed by Presidential Decree
- Real estate located in Korea (Capital transactions should be reported as prescribed by the Foreign Exchange Transactions Act.)
- Other means of domestic payment as prescribed by Presidential Decree

<sup>32)</sup> Article 2 (1) 8 of the Foreign Investment Promotion Act

## Korean Pavilion Attracts Visitors at CES 2020

KOTRA, along with the Korea Electronics Association (KEA), opened a Korea Pavilion at the Consumer Electronics Show (CES) 2020, the leading consumer electronics exhibition from Jan. 7 in Las Vegas, Nevada in the U.S.

Notably, this year, the Korea Institute of Startup & Entrepreneurship Development (KISED), Gyeonggi Business & Science Accelerator (GBSA), Seongnam Industry Promotion Agency (SNIP) and Suwon Sustainable City Foundation (SSCF) teamed up to put the pavilion together, in which 95 Korean tech companies showcased their future technology.

This year's buzzworthy tech trends include digital therapy, next generation mobility, future food-tech, facial recognition, and robotic engineering. Combined with such advanced technologies, numerous products and services developed in Korea piqued the interest of visitors in Las Vegas.

At the CES Innovation Awards, a competition honoring outstanding technologies in consumer electronics, global tech giants Samsung Electronics and LG, as well as Korean SMEs were on the list for this year's award winners.

Notably, LinkFace, a developer of wireless noise-cancelling headphones with a bioelectric monitoring system that can prevent hearing loss in children; Corners Co. Ltd., an intelligent evacuation solution company allowing preparation for firearm violence; and Microsystems Inc., a developer of IoT sensors for self-cleaning technology that can remove pollutants on lenses were some of this year's honorees.

In addition, KOTRA invited a group of purchasing managers working for top global players in the industry such as Facebook, Verizon Wireless, Ford Motor Company, Amazon, Qualcomm and HP to help Korean tech firms at the show meet with them for potential partnership.

KOTRA President and CEO Kwon Pyung-oh said, "CES 2020 serves as a window to catch a glimpse of the technologies of today and tomorrow and make predictions about what will come next," adding that "KOTRA will make all-out efforts to help entrepreneurs in Korea showcase their innovation and form partnerships in the global arena."

## Invest KOREA's Services

### Invest Korea Plaza (IKP)



Invest Korea Plaza (IKP) is Korea's first facility dedicated to the incubation and investment of foreign investors. Each year, more than 40 foreign-invested companies rent out offices in the plaza and utilize IK's one-stop service.

### Foreign Investment Ombudsman

The Office of Foreign Investment Ombudsman is an organization established in 1999 to provide close aftercare support and grievance resolution services for foreign-invested companies, and is dedicated to resolving any difficulties that foreign-invested companies face while doing business in Korea.

### One-Stop Service for Foreign Investors

The Inbound Investment Consulting Department not only

assists foreign investors and foreign-invested companies in the investment review and implementation stage, but also offers customized services to help foreign investors and their families get comfortably settled in Korea.

### Invest Korea Market Place (IKMP)

IKMP is a project aimed at discovering promising Korean SMEs seeking to attract foreign investment and matching them with foreign investors who have compatible needs. Projects looking for investment are posted on our website at [www.investkorea.org](http://www.investkorea.org).

### Job Fair for Foreign-Invested Companies



IK organizes annual job fairs to help foreign-invested companies discover qualified local talent, and job seekers find employment through job consultations, on-site interviews, and more.

## KOTRA's Overseas Network

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**Publisher.** Kwon Pyung-oh | **General Manager.** Lee Jehyuk

**Editor-in-chief.** Grace Park | **Acquisitions Editor.** Jinyoung Lee

**Designer.** Jang YooJin | Printed by Samsin Munhwa Printing Co., Ltd.