Data Analytics South Korea

Market Intelligence Report

Department for International Trade
Report prepared by Intralink Limited

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TECHNOLOGY IS GREAT
BRITAIN & NORTHERN IRELAND

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Intralink is an international business development consultancy with a deep specialism in East Asia.

Our mission is to make companies' growth in overseas markets fast, easy and cost effective.

We have 80 multilingual employees, a 28-year track record and offices in London, Silicon Valley, Boston, Shanghai, Tokyo, Seoul and Taipei. We enable Western companies to expand in Asia, and Asian companies to expand in the West.

We do this by providing the in-country expertise to identify a company's market opportunity, secure sales and drive its business growth. Our teams are immersed in the business practices, cultures and customs of their local markets.

And we are different from other consultancies as we do not just develop market expansion strategies for our clients – we play a hands-on role in building their businesses.

Through our Surrogate Sales Program™, we close deals, generate revenues and, when a client is ready, help them set up a permanent in-country presence through a local subsidiary, partnership or acquisition.

We also offer a range of additional services including market opportunity assessments, distributor and supplier searches, investment co-ordination and local representation.

Our clients are companies from start-ups to multinationals in the automotive, energy, healthcare, electronics, telecoms and other high-growth sectors. We also work with governments and economic development agencies to promote exports and attract foreign direct investment.

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Table of Contents

Table of Figures

Table of Tables

1. Introduction

South Korea (Korea) has an ever-increasing amount of data produced every year, meaning there is a growing demand for effective data analytics tools in both the public and private sectors. Although restrictions on the collection, analysis and use of data have acted as a brake on Korea's data industry until now, the newly-elected administration of President Moon Jae-In has signalled its intention to create a more open data ecosystem that will allow for more innovation and sharpen Korea's global competitiveness in the so-called Fourth Industrial Revolution.

The Korean data industry is developing fast. The market was estimated to be worth GBP 311m in 2017 and is expected to reach GBP 700m by 2020. Korea does not currently have a strong base in terms of data analytics technology, so it is likely to continue to import technologies and services from abroad over the next few years to support this growth. However, domestic firms are developing their expertise quickly, meaning that this window of opportunity for foreign companies may not stay open for long.

British companies may find success in Korea with solutions that help the large conglomerates and brands make better business decisions (e.g. new product and service development), solutions that help marketers develop and implement effective marketing campaigns and offerings that help data collectors (e.g. financial institutions) analyse and add value to their data. New opportunity areas for data analytics are also emerging with the rise of 'convergence' technology sectors such as smart living and smart manufacturing, autonomous vehicles and digital health.

British companies wishing to address Korea's data needs should expect to face some challenges. First, although Korea is moving towards providing greater access to information, the country continues to have one of the toughest personal information protection and privacy regulations in the world. It may be hard for inexperienced newcomers to navigate the regulatory environment without the right support. Second, those who provide data analytics solutions to marketers may have a difficult time winning contracts without adequate on-the-ground support and relevant case studies demonstrating the technology's successful rollout in other markets. Third, language and cultural barriers are often difficult to overcome when engaging with Korean buyers or potential partners, so having the right local support can make all the difference.

The data analytics market in Korea is fast-growing and there is a strong recognition within the country's business community of the value of applying data techniques to business processes. Korea's large conglomerates are looking for best-in-class products from around the world and new government support programmes aimed at helping smaller companies make use of data mean Korean SMEs are increasingly open to working with foreign solutions. There is, therefore, plenty of potential in Korea for British data analytics firms with the right go-to-market strategy and a strong value proposition.

2. Korea – An Overview

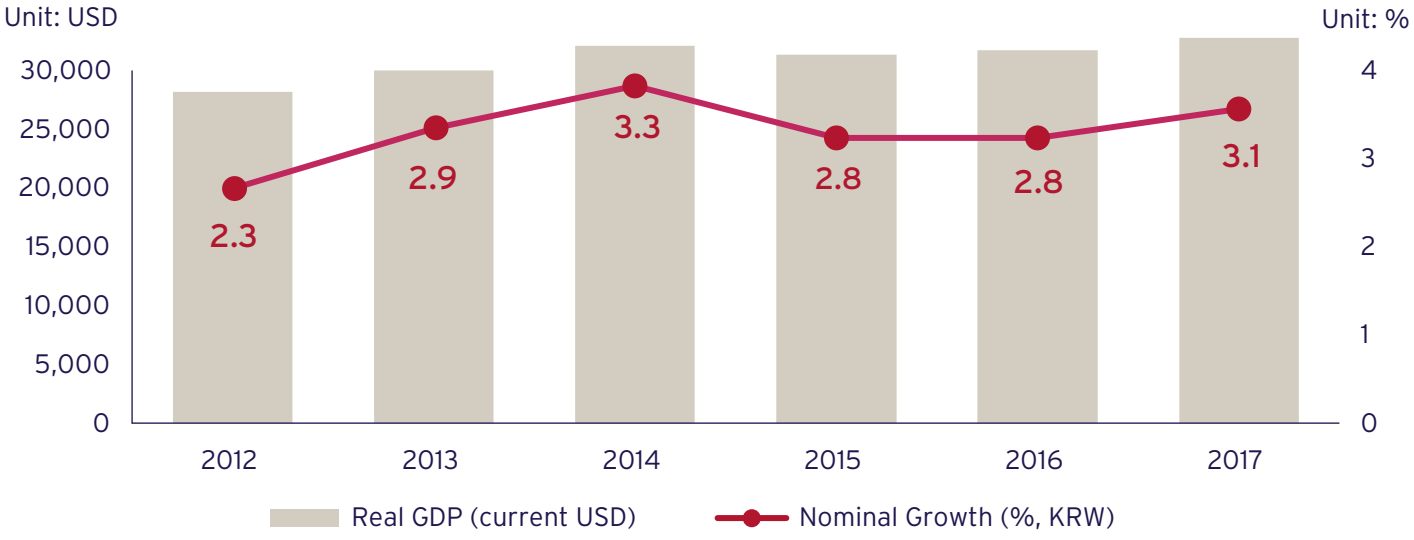
KEY POINTS

- Korea has climbed out of poverty to become a technology powerhouse over the last 60 years
- The country is the world's 11th largest economy with a GDP of just over GBP 1 trillion
- It has maintained an annual GDP growth rate of around 3% in recent years

In the space of just 60 years, Korea has developed from an agricultural economy to one driven by high-value industries such as automotive, shipbuilding and advanced manufacturing. Perhaps most remarkable of all is the country's success in the areas of electronics and information communications. As well as dominating the global semiconductor industry, Korea has leap-frogged its peers in terms of ICT infrastructure (smartphone penetration rate, broadband speed, etc.) and this, coupled with a demanding and technology-embracing population, means Korea is becoming an economy driven by creativity and innovation.

With a population of 51 million people, Korea boasts the 11th largest economy in the world, a GDP of GBP 1.11 trillion in 2017 and a per capita GDP of GBP 22,218 in the same year. Whilst not experiencing the growth witnessed in China, the country has maintained a strong annual growth for a developed economy of around 3% in recent years, outpacing its regional rival, Japan. Korea's trade dependency ratio is extremely high at over 80% and its economic performance is heavily affected by the economies of China, the US and Japan. Trade and investment flows between Korea and the EU are growing as a result of the FTA that came into effect in 2011. Trade between Korea and the UK specifically has grown rapidly over that period and both countries have expressed a strong desire to conclude a trade deal once the UK leaves the EU.

Figure 1: Korean GDP per Capita (2012 – 2017)



Source: World Bank

3. The Data Analytics Industry in Korea

KEY POINTS

- The Korean data market is currently valued at GBP 311m and is expected to grow to GBP 700m by 2020
- Korea has grown quickly to become a developed economy, but weaknesses remain in certain industries – the collection, analysis and application of data is one such example
- Korea trails global data leaders and is only at 65.7% of the data industry development level of the US
- Data is increasingly used in large conglomerates and sectors such as digital marketing, but SMEs lag and general penetration is low; 94% of Korean companies are not using any data analytics techniques

The Korean data market is currently estimated to be worth GBP 311m and to grow to nearly GBP 700m by 2020. Major companies, such as Samsung, LG, POSCO and Hyundai-Kia, have already successfully introduced data analytics into their business management and processes. Many companies are establishing internal big data divisions and the Korean government is encouraging such efforts, especially for Korean SMEs. Various government agencies and organisations work closely with the industry to align, co-ordinate and promote business opportunities related to data analytics and big data.

Korea has outpaced most countries in terms of its ICT infrastructure – the country ranks at number two in the World ICT Development Index and in smartphone penetration rate. It is number one in the e-Government Readiness Index and has an average internet speed of 25.3Mbps – 5.6 times faster than the world average. Mobile data volume has been increasing rapidly at 30% CAGR and is expected to reach 650 petabytes per month in 2020.

Not all areas of the information economy have developed at the same rate, though. Data analytics is one example of an area where the country's development has not kept pace with its competitors. Stringent privacy regulations as well as tight government oversight have conspired to make it difficult for Korean companies to apply data analytics to understand their customers. Such regulations have also made it difficult for foreign data technology vendors to access the market. However, sectors such as consumer electronics, finance, marketing and retail, as well as e-government, have started to make substantial progress in applying data analytics in recent years.

According to the 2016 market report by the K-ICT Big Data Centre, Korea will need between three and four years to close the gap with the leading countries in terms of data analytics. K-ICT reached this conclusion by comparing the level of sophistication of data analytics techniques employed across several industries amongst a selection of developed nations, and creating a 100-point scale. The top score was indexed to advanced countries such as the US and the UK. Korea's score of 65.7 is average but the pace of development in Korea is quickening and the gap with global leaders is expected to be bridged by 2020.

Table 1: Korea's Competitiveness in the Global Data Analytics Market

Year	Score (100 max)	Time required to catch up (years)
2015	62.6	3.6
2016	65.7	3.4
Difference	+3.1	-0.2

Source: K-ICT Big Data Centre

Korea is improving its competitiveness in terms of the collection, storage, management and processing of data. However, market specialists report that the country needed to catch up with more advanced economies in the application of data techniques to trading, consulting, analysis and services. This is analogous to the overall structure of the Korean economy, with strengths in hardware engineering and manufacturing but relative weakness in software solutions development. The Korean big data market is still largely focused on investments in infrastructure; however, it is now making headway in its capabilities in software, services and related products. According to Insightplus, while servers and storage recorded the highest growth amongst ICT product-related sales, the market for software and services has experienced similarly strong growth with 30% and 33% respectively between 2016 and 2017.

Table 2: Big Data Market Size in Korea (Unit: GBP)

Class	2016	2017	Y/Y growth rate (%)
Server	50.4m	68.8m	36%
Storage	62.4m	83.3m	34%
Network	18.3m	21.9m	20%
Software	55.4m	72.2m	30%
Service	48.9m	65.0m	33%
Total	235.5m	311.4m	32%

Source: 2017 Big Data Market Status Research, Insightplus

Although there is an increasing awareness of the potential for data analytics in areas such as digital marketing, sectors such as retail and finance are only now beginning to recognise its value and devise strategies to exploit it. One problem cited during research for this report is that the underlying technology behind data analytics is still expensive and often overwhelmingly complex for key decision-makers to understand. As such, currently only large conglomerates in Korea with the resources necessary to prepare such strategies have been able to make use of data analytics. However, even here the adoption rate remains low, not due to financial impediments but because decision-making processes are often slow and conservative.

Industry Insider's Thoughts

For data analytics to become commonplace, the Korean market requires more time than other countries. A top-down decision-making culture is one of the reasons why it is quite difficult to license and apply data analytics technologies. Even small-scale testing of new technologies requires multiple decision-makers to sign off on contracts. However, major corporations in Korea have begun to open up and utilise their data, and they will become even more active in the next few years. For marketing companies like ours, this means a new, open field for developing new services, increasing our employees' competencies and improving our efficiency through data analytics.

Mobile and Media Solutions Senior Manager – HS Ad

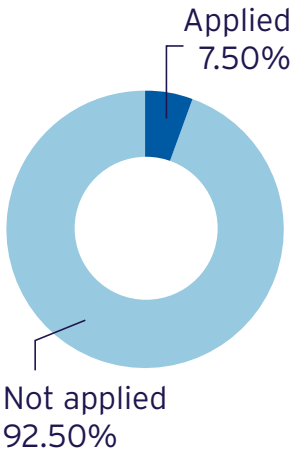
Table 3: Data Analytics Market Size and Growth in Korea (Unit: GBP)

Sector	2016	2017	Y/Y growth rate (%)
Government/public	**68.4m**	**91.6m**	**33.9%**
Private	**167.2m**	**219.8m**	**31.5%**
Total	**235.5m**	**311.4m**	**32.2%**

Source: K-ICT Big Data Centre

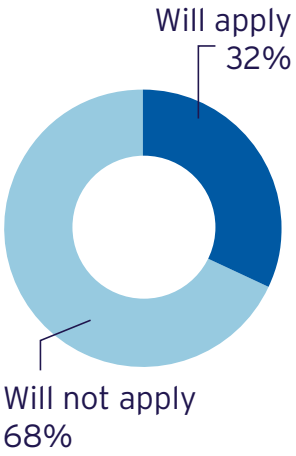
According to research firm Insightplus, 92.5% of Korean companies are not using any data analytics techniques in their business processes. Further, more than 68% said that they did not intend to introduce data analytics in the foreseeable future. In a separate study, K-ICT surveyed 228 companies regarding their plans to integrate big data into their business processes; only 27.2% believe they will do so before 2020.

Figure 2: Adoption of Big Data in 2016



Source: 2016 Big Data Market Research, Insightplus

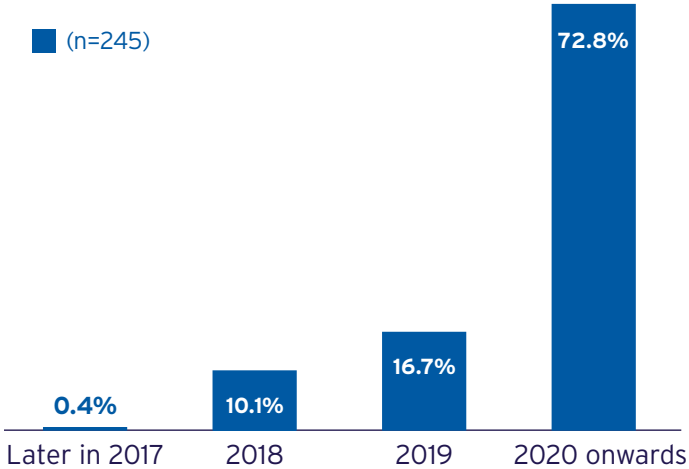
Figure 3: Plan for Adoption of Big Data in the Future



Source: 2016 Big Data Market Research, Insightplus

The manufacturing and public sectors dominate in terms of number of data analytics tools use cases, but experts predict an increase of use cases in finance, retail, telecommunications and healthcare in the coming years. The direction of travel and market growth patterns in Korea are largely in line with big data trends around the world.

Figure 4: Timeline for Introduction of Big Data by Korean Companies



Source: K-ICT Big Data Centre

Table 4: Data Market Growth Rate Outlook as Compared to 2016 (Unit: %)

		Overseas Market			Korean market		
Class	**Cases**	**2017**	**2019**	**2020-2021**	**2017**	**2019**	**2020-2021**
Total	631	25.2	35.2	47.8	18.4	26.1	35.7
Public	158	21.6	30.4	45.3	17.1	23.4	35.1
Finance	37	22.3	26.9	37.6	17.1	22.1	33.7
Retail/Service	89	29.0	42.6	55.8	21.9	32.3	45.8
Manufacturing	256	27.6	38.1	49.4	18.9	27.4	35.8
Medical	48	21.0	27.1	47.7	15.8	20.1	26.7
Telecom/media	43	23.3	36.9	39.9	17.6	25.5	28.2

Source: 2016 Big Data Market Research, Insightplus

While many Korean professionals acknowledge the importance of data analytics, there has so far been a reluctance to adopt such techniques and technologies largely due to a general lack of experience and an uncertainty about the profitability of such investments. This, however, gives a good insight in to what must be achieved during the next two to three years of what market analysts predict will be a 'reviewing period' as companies are waiting for first-movers in the market to develop reference cases. In other words, in the upcoming years, many companies, SMEs and conglomerates alike will aim to test and evaluate multiple data analytics technologies and services via small-scale proof of concept (PoC) projects to select those that work best, are the most affordable and are the most widely accepted and adopted by the relevant market sector.

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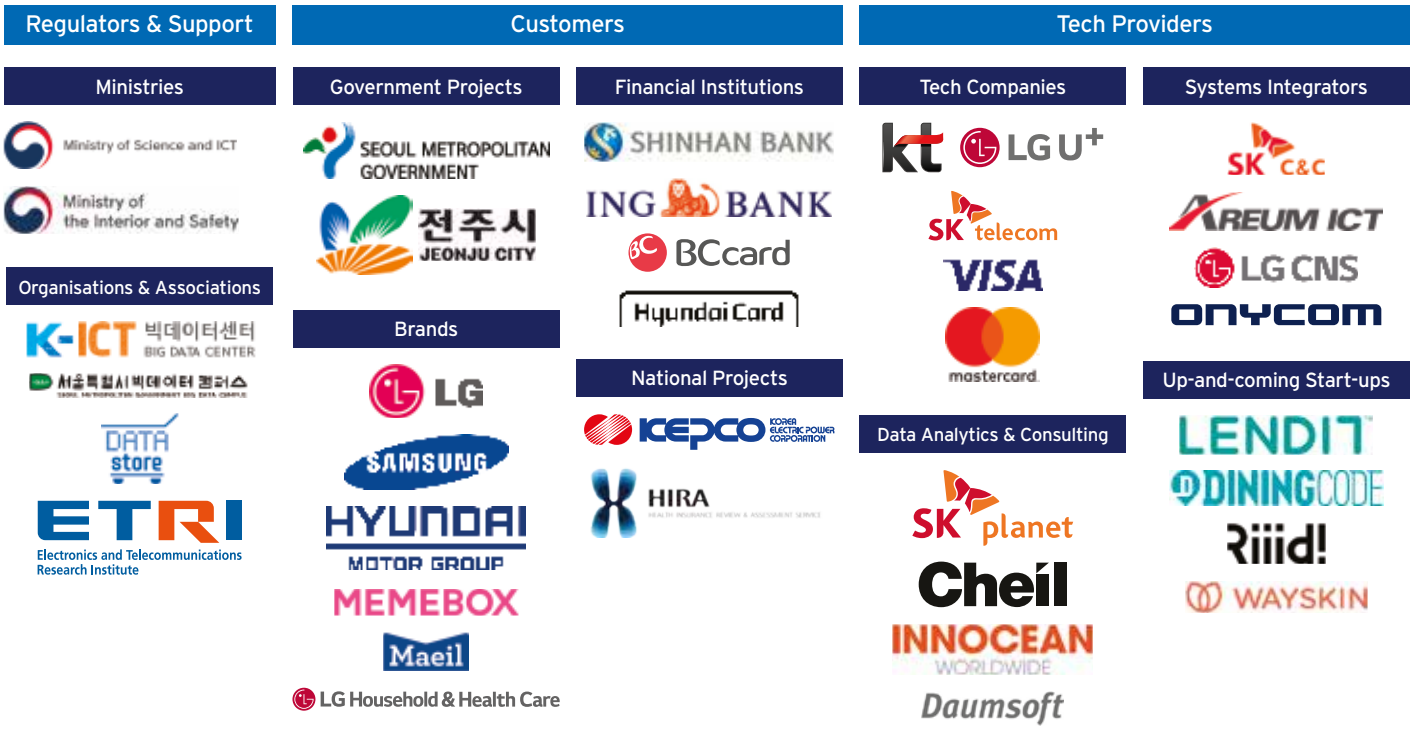
Industry Insider's Thoughts

Companies like CJ recognise the need to develop technologies that allow for smarter decision-making in areas such as policy making and e-government, healthcare, energy and corporate management. Korea used to be a country where data extraction and use was limited due to security concerns, but we now see that both the public and private sector are opening up to the idea and policy makers are giving us more space to do interesting things with data.

Senior Manager – CJ Olive Network

For UK companies, this means the Korean market offers opportunities and the time is right to start exploring these, as the market will soon become increasingly crowded and competitive. Once early adopters make their move in Korea, others tend to follow quickly. What it also means is that UK companies would be well-advised to take a broad approach to the market, targeting multiple customers in the early stages and, through multiple PoCs, narrow down their pipelines to several high-value customers with whom to build long-term relationships.

Figure 5: Data Analytics Ecosystem



4. Government Initiatives

KEY POINTS

- The Korean government plays a leading role in promoting Industry 4.0 and funding big data projects
- Government-funded projects can offer opportunities for foreign data analytics companies
- Korea is planning to launch open data centres for specific sectors such as finance, healthcare, automotive and telecommunications
- The Korean Personal Information Protection Act (PIPA) ranks among the toughest data privacy laws in the world. Uncertainty over its details and enforcement have hampered innovation
- The Moon Jae-In administration is working on regulatory frameworks to support the data industry

The Korean government has taken an active lead in policy making related to industries of the so-called "fourth industrial revolution", including big data. It is important for overseas companies that seek to do business in Korea to pay careful attention to government-run projects as they can become a focal point for establishing priorities and the direction of research funds for private sector firms as well.

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Industry Insider's Thoughts

The Korean government has identified five focus areas for the Fourth Industrial Revolution, abbreviated as ICBM + AI. ICBM stands for IoT, Cloud, Big Data and Mobile and Korea aims to become a global test bed in these areas based on the strong ICT infrastructure and a loosening of relevant legislation.

Director, ICT Policy Planning Team – Institute for Information & communications Technology Promotion (IITP)

When President Moon Jae-In took office in May 2017, two of his main campaign promises were the creation of jobs and an economic policy based on 'innovative growth'. As his government policy started taking shape over the course of 2017 and early 2018, it became clear that the fourth industrial revolution takes a central place in achieving these two goals, especially after Moon established the Presidential Committee on the Fourth Industrial Revolution and the Ministry of SMEs and Start-ups.

Big data plays a key role in the Moon administration's science and technology policy plan for the fourth industrial revolution. Moon wants to create a standard of open data systems on a government level and promote the distribution and usage of data in Korea. The government therefore plans to open big data centres that collect and make public data from specific sectors such as automotive, finance, healthcare and telecommunications. The goal is to have three of these centres opened by the end of 2018 and a total of ten centres by 2022. The government also wants to make public data that is meant specifically for AI machine learning and mentions the finance and legal sector explicitly in this regard.

Closer Look

Seoul City and KT collaborated on the application of data analytics to public services in 2013 to determine which routes to launch for a new night bus service. KT proposed to tackle the problem by analysing over three billion data points on call usage and correlating them with Seoul City's traffic data.

This approach resulted in clear evidence about night-time travel patterns and prompted Seoul City to open new night bus lines accordingly. In the first five months, more than 220,000 people used the night bus service, and among these passengers, 88% requested for the service to be expanded further.

Riding the wave of success, Seoul City opened a 'Big Data Campus' in 2016 to provide a platform containing more than 40 different data sets collected since 2013 for start-ups to use for data analytics. The participants can use the facilities to study, learn and develop new products, and also receive support from experts via seminars.

Moon's policy of liberalisation is remarkable considering Korea's strict privacy legislation. Korea has established itself as one the toughest jurisdictions for personal information protection and privacy compliance with the Personal Information Act (PIPA) at the core of Korean privacy legislation. PIPA requires personal information to be collected exclusively for specific and lawful purposes. It requires the appointment of personal information managers who ensure that all information is accurate and held securely, disclose companies' privacy policy and anonymise information wherever necessary. PIPA also contains separate rules for the initial collection and use of personal information and for any subsequent different use or transfers to third parties. It also has specific rules applicable to business transfers and other corporate transactions.

Industry Insider's Thoughts

You should take care with regard to PIPA: it can be difficult to deal with for small companies, both financially and in terms of reputation. It is very protective of the consumer but it makes business-to-customer dialogue difficult. In the US, you can send out direct marketing messages unless receiving bodies tell you to stop, but in Korea you cannot send anything unless a consumer explicitly asks you to. We need to protect privacy and avoid spam and other annoying marketing practices, but we also need to be able to utilise what we already know about our customers to serve them better.

Marketing leader – SK Planet

Due to the strict legislation, the Moon administration takes great caution with the liberalisation of the big data sector in Korea. The government aims to establish an evaluation system to ensure the quality of the data it accumulates. This system is slated to be in place on a central government level by the end of 2018, a local government level by 2019 and for other government affiliates by 2020. It also attaches great importance to the safe storage and transmission of data. The government is aware of the unease of the public with regards to making personal data public. To make for a smooth process, the government has stated that it will inform the public on the need and limitation of the use of personal information to garner public support.

5. Opportunity Areas for British Companies

KEY POINTS

- Korea is traditionally more of a fast follower than an innovator – companies are far more likely to adopt new data-based technologies if they are presented with strong reference cases
- Opportunities for British companies exist in new product and service development, marketing, data collection and resale and convergence areas such as automotive and digital health
- The dominance in the digital market by local giant Naver with its "walled garden" approach has traditionally made it difficult for foreign companies
- Facebook, Instagram or YouTube, with more open ecosystems, are opening up new possibilities
- Tactical-level data analytics solutions for "small data" are currently gaining traction in the market

There are several business areas that can immediately benefit from data analytics and potentially offer opportunities for British companies with the necessary expertise. These include new product development, marketing and data aggregation and resale and have applications in industries such as finance, telecommunication and media, retail and services, manufacturing, construction and healthcare. The following section will provide more details on these areas and illustrate them with relevant case studies.

5.1 Data Analytics in New Product/Service Development

The Korean tech industry has generally been characterised as that of genuinely skilled fast followers rather than true innovators. This has served the Korean economy well and, in the last decade, companies such as Samsung and Hyundai have quickly risen to prominence as industry leaders. In the past, Korean companies conducted product development based on imitating successful competitors. Today, Korean companies are turning to their own customers to understand their needs in order to develop tailored products and services.

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Industry Insider's Thoughts

Without proper data analytics techniques, it used to be difficult for companies to make business decisions. Managers were afraid to take responsibility for unforeseen consequences. Now, we have access to massive amounts of data and can use it in decision-making. But people often see data as a universal answer to all problems. What we must remember here is that data cannot show you the future. Data analytics is "now-casting" – it will not predict the future but can help you prepare for it.

Board Director – Daumsoft

In applying data analytics, leading players in the Korean market have focused on two main data analytics streams: real-time analytics based on immediate data flow and trend analytics using accumulated data sets.

Large conglomerates such as Samsung, LG and Hyundai-Kia are the leading players with market-tested data analytics applications driving their new business development processes. However, many of the country's SMEs are gradually adopting similar procedures. While the market has deployed more locally-developed solutions to-date, we see growing interest in using foreign technologies as well.

As a result, the market is wide-open for UK companies but, without a unique value proposition, they will face competition from local players who already have a domestic track record. This again emphasises the need for offering solutions that can be field-tested with relative ease and without heavy cost, ideally accompanied by solid case studies from other markets with characteristics similar to Korea (e.g. Japan, Taiwan, Singapore).

5.1.1 Case Studies – Product Development

Korea Yakult Co., Ltd.	
Website	**www.hyfresh.co.kr**
Problem	What new product to release to revitalise dwindling sales
Approach	Used social network buzz analytics to pin-point customers' suggestions, complaints and needs to develop a new, tailored product
Outcome	Redesigned packaging – a throw-back to the company's past product – and a new, larger version of the product registered sales of 200,000 units/day
Developed by	Internal data analytics team and third party consultants
Overview	Yakult is a beverage and health product manufacturer known for its fermented milk drinks. In 2015, the company suffered from dwindling sales. Company management decided to employ a data-driven approach to develop a new product. By correlating first party sales data with social media buzz, they pin-pointed that many of the older customers were nostalgic about a withdrawn version of the product that allowed the bottle to be frozen to create a popsicle-like snack. Korea Yakult viewed this as an opportunity and developed a new product with the classic 'flipped' Yakult bottle. In April 2016, Korea Yakult released the product, called 'Freeze and Flip Yakult'. It proved an instant hit, quickly generating 200,000 unit sales per day. When Yakult analysed customers' purchase habits and realised customers tended to purchase several units simultaneously, it released another version - a larger size 280 ml bottle - which also became a hit. This project demonstrates how a concerted cross-departmental effort to combine marketing, design, manufacturing and data analytics helped the company's bottom line.

Korea Telecom (KT)	
Website	www.kt.com
Problem	How to tailor mobile plans to customer demographics
Approach	Analysed first party data correlating age, gender and mobile data usage of existing customers to uncover patterns and develop tailored subscription plans
Outcome	Developed a new plan for younger customers and gained 400,000 new subscribers
Developed by	Internal strategy team and third party consultants
Overview	KT is Korea's second-largest mobile telecommunications company with more than 18 million mobile subscribers. As such, over the years it has accumulated large amounts of first party quantitative user data. However, only recently did KT begin to use advanced analytics tools to transform the data into useful and actionable information. By correlating mobile usage patterns with demographic and payment data, KT's data analytics team found that, among customers under the age of 24, nearly 70% relied on their parents to cover the costs of their plans. Moreover, 60% of this group exhibited intensive data usage between 6pm and 9pm, and among those, 66% enjoyed multimedia services such as music and video streaming. With this in mind, KT developed a new plan dubbed 'Y24' allowing three hours of unlimited data access at peak times and a cheaper monthly fee. This new plan brought in 400,000 subscribers in just over a year.

5.2 Data Analytics in Marketing

The size of the digital marketing sector in Korea was GBP 2.65bn in 2016, with 42.7% of the total spent on mobile advertising. While this represents only a fraction of Japan's digital media market (estimated at GBP 6.31bn in 2016), in per capita terms it is similar. Considering Korea's lower GDP, digital marketing represents a higher share of GDP in Korea than it does in Japan.

Data analytics has been known as a good method to partially eliminate the trial-and-error approach to marketing. The boundaries between product development, manufacturing and product marketing teams are becoming less distinct when data analytics comes into play. Furthermore, the post-purchase customer relationship management and customer services are increasingly being handled by unified data analytics and management systems across multiple departments.

Digital marketing in Korea has traditionally revolved around local digital publishers such as Naver, Daum (owned by Kakao) and Nate (owned by SK Communications) that dominate the market. They currently hold a combined 60-70% of the digital media market in terms of available inventory, versus 20% for Google (and related companies such as YouTube) and 10% for Facebook, Instagram and others.

Table 5: Korea's Local Digital Publishers (Unit: GBP)

Company	Revenue	Employees	Key Services	Key Target Industries
Naver	3.2bn	2,701	Search portal Advertisement Crowd intelligence Social media	B2C B2B
Daum (Kakao)	675m	2,423	Search portal Advertisement Social media	B2C B2B
Nate (SK Communications)	32.8m	249	Search portal Advertisement Social media	B2C B2B

Source: Intralink

What also sets domestic digital publishers apart from their global counterparts is the access to data they allow marketers. These companies take the 'walled garden' approach and do not open their content platforms to integration with external data management platforms (DMPs). Only select local partners – so-called "media reps" – are authorised to buy media and provide performance reports to their clients. This ecosystem makes it difficult for foreign companies with data-driven marketing solutions to make compelling value propositions directly to Korean advertisers. Instead, such companies tend to work through partnerships with local media reps as intermediaries. For example, the Korean media rep MezzoMedia formed a partnership with Google DoubleClick Bid Manager (DBM).

However, the media landscape is evolving as global social media sites such as Facebook, Instagram and YouTube gain prominence and chip away at Naver and other domestic players' market shares. The global social media sites offer more open APIs and are more open to working with external DMPs. Therefore, demand is increasing for data analytics and big data solutions designed for ad agencies and advertisers.

Riding the wave of these changes in the market, Western companies like DataXu, SocialBakers and Strike Social have made break-throughs in the market by by-passing media reps and securing deals directly with Korean ad agencies and advertisers in the last couple of years. As digital media spending continues to increase, more opportunities for data science specialists will emerge. While the market for general purpose digital marketing data analytics is already crowded, niche applications such as focusing on one specific social network (e.g. Facebook) while adding more depth to the analysis, will be in high demand.

However, some scepticism about big data can be observed in the Korean digital marketing space as the buzz surrounding the term wears thin. The main criticism is about the level of granularity big data offers. In other words, some professionals in the field regard big data as a useful tool to discover macro trends, but are sceptical about its ability to establish direct, long-term relationships with customers.

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Industry Insider’s Thoughts

Big data is useful and enlightening and has pushed us marketers to the next level. But it has its limitations and cannot solve all marketing problems. We recommend that our clients use big data to draw up strategic plans, but to execute those plans they need to pay attention to tactical-level small data. Big data is all about finding correlations while small data is about finding causation. Small data is actually not that small.

Board Director – Daumsoft

The ‘small data’ movement is gaining traction in Korea at the moment. Whether small data will survive beyond the buzzword status in the long run remains to be seen, but UK companies offering tactical-level data analytics solutions for marketers may find opportunities in Korea.

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Industry Insider’s Thoughts

Data analytics was something new to us back then and nobody could guarantee the result. But we used data analytics’ results wisely and made our way to the top in the market. We must remember it is not simply about data: how to utilise all that data is the key. The idea of automation is great but in the end our success was thanks to the combined efforts of lots of people working together across different departments.

Marketing Strategy Team Leader – Samsung Electronics discussing its use of data analytics in the B2C SSD market

5.2.1 Case studies – Marketing

Shinhan Bank	
Website	**www.shinhan.com**
Problem	How to promote services to existing customers to better suit their needs
Approach	Analysed helpline call centres' voice recording content and keywords from a customer service live chat app
Outcome	Uncovered a new sub-group of customers based on demographics and lifestyle. Designed a campaign promoting tailored financial products; successfully opened 4,700 new savings accounts
Developed by	Internal strategy team and local ad agency
Overview	Shinhan Bank is one of Korea's largest banks. Leading to the holiday season of 2016, Shinhan analysed text and voice records from customer help centres for frequently-occurring keywords. This analysis revealed a steep increase in keywords such as 'instalment savings', 'account', 'new account opening' and 'new (product)'. 62.5% of enquiries for savings and instalment savings accounts originated from the 30-40-year-old customer segment, two thirds of whom were female. Shinhan Bank inferred that many young mothers want to open new accounts for their children to deposit their New Year's cash gifts. Shinhan Bank hired a marketing agency to develop and launch a promotion tailored specifically to these customers. As a result, 4,700 new instalment savings accounts were opened during the holiday season – three times more than during the same period the previous year.

Innocean	
Website	**www.innocean.com**
Problem	How to understand the customer's online journey to tailor promotions
Approach	Analyse first party data and internet browsing behaviour to learn customers' interests and interactions with website content
Outcome	Developed a new platform for the main website of Hyundai Motor Company
Developed by	In-house data analytics department and third party DMP vendor
Overview	Innocean is an affiliate of the Hyundai Motor Company and a full-service ad agency providing marketing services such as traditional and digital advertising. Its main customer – Hyundai – wanted to deepen its understanding of visitors to its main Korean website: what is the customer journey prior to landing on Hyundai's page? What are these customers' interests? How do they interact with the Hyundai website? In the past, much of the digital advertising budget was apportioned to Naver ads - but the effectiveness was unclear. In response, Innocean decided to develop a new 'smart platform' borrowing bits and pieces of technology from several DMP vendors to scour the internet for actionable data on Hyundai's customers. With this platform and first party sales data as a reference point, Innocean could understand customers' previous purchase history, visit records, browsing habits, search history etc. Using both big and small data techniques, this platform allows Innocean to develop targeted campaigns on behalf of Hyundai and better manage customer relationships.

5.3 Data Collection, Aggregation and Resale Services

Thanks to Korea's world-class telecommunication infrastructure, the capability to handle data in Korea is constantly increasing. The data service market size in Korea was GBP 49.2m in 2016 and is growing rapidly. However, due to the restrictions imposed by PIPA, publicly-available data is sparse, and companies have strict limitations on what data can be used externally. To this day, there is no clear framework for running a data aggregation and resale business in Korea. This is different from markets in the West where companies routinely purchase third party consumer data from credit card processing companies like Visa or MasterCard, or from marketing platforms like Adobe, Krux or Lotame.

Korean card companies are now beginning to monetise data that has been amassed for some time but which has sat largely unused. Though not yet fully deregulated, the data industry in Korea is beginning to bloom. In allowing companies to monetise data they collect, the finance industry saw new opportunities first, and the telecoms sector is now following suit while marketing platforms are still waiting for the digital publishing industry to open up, which is expected to happen soon.

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Industry Insider's Thoughts

Many banks in Korea receive government funds. Because government policies and regulations affect how banks and the finance industry move, bringing in changes or new applications was never easy. But if there is a government drive, things can be very different. Recent improvement in fintech, flexible certification approvals and other liberal movement in this field are really happening in Korea.

Board Director – Daumsoft

British companies looking to enter the data collection and resale market in Korea will face a challenging environment but, under the Moon administration, opportunities do exist. Especially in the aforementioned telecommunications and finance sector, there are possibilities, but also the legal, healthcare and transport sectors might prove to be fertile grounds for British data collection and resale companies. In particular, the demand for algorithms and tools relevant to the collection of data is likely to increase significantly.

5.3.1 Case studies – Data Handling

BC Card	
Website	www.bccard.com
Problem	How to make data trading more accessible and affordable to merchants
Approach	Use anonymised financial data correlated with public data in an open platform
Outcome	Create a secure platform to encourage data exchange
Developed by	In-house data team
Overview	BC Card is a subsidiary credit card company of KT Capital Co. Ltd. offering transaction authorisation, authentication, clearing and settlement, issuing and merchant management services. BC Card has one of the most sophisticated big data centres in the country, providing expenditure trend reports to businesses and merchants. Recently, it also began offering a combined analysis of domestic credit card expenditure data, social media and telecommunications data, categorised by user nationality (Korean, Chinese and other foreigners). BC Card has traded 'anonymised data' directly with corporate customers but is now working on creating an open platform. BC Card prefers to develop its solutions in-house due to security concerns, but is open to collaboration with external data science innovators.

Hyundai Card	
Website	www.hyundaicard.com
Problem	How to empower customers with better information on products they buy
Approach	Analysed customer F&B spending data focused on geography and demographics
Outcome	Developed a mobile application to serve B2B and B2C customers with reliable reviews and market intelligence. Doubled transaction volume
Developed by	In-house data team and third party app developers
Overview	Hyundai Card provides credit cards and financial services such as instalment financing, cash advances and loans. The company analyses customer spending data by geography, shopping category, gender, age and transaction time to understand customers' shopping preferences. In the food and beverage category in particular, this data is made available to private and corporate customers via a service called 'My Menu'. It is more reliable than other internet-based review services as it references actual credit card transaction data – and uses vast amounts of it. App users can check what is popular in a given neighbourhood and receive coupons or credit card loyalty points for going with the recommendation. This also allows for closer cooperation between Hyundai Card and top-rated merchants. Hyundai also releases reports on trends it uncovers in data. For example, in Seoul, Japanese restaurants are the most popular foreign food, while in Busan, Western food is most popular. Data also showed that the market for coffee shops is slowing in Seoul, while booming in the neighbouring city of Incheon.

5.4 Data Analytics in Other Areas

Applications for data exist in many other areas besides the specific use cases outlined above. Recently, the Korean market is showing strong interest in the areas of 'Smart Factory', 'Smart Manufacturing', 'Smart Grid', Internet of Things and Artificial Intelligence, just to name a few examples. These sub-sectors require a combination of several technologies, both on the hardware and the software side, but data analytics can be considered the lingua franca meshing the emerging technologies together. Companies such as LG CNS, POSCO ICT, Hyosung ITX or Samsung SDS have formed 'smart' divisions and offer consulting and systems integration services to enterprise customers.

One convergence area of big data, AI and IoT that has drawn a lot of attention over the past year is mobility. With more and more companies and the government getting involved in autonomous vehicles, there is a high demand for technologies such as digital mapping, data collection and facilitating technologies (e.g. sensors). IT giants Naver and Kakao are investing heavily in these areas with Kakao's navigation application reaching over 10 million downloads. Telecommunication conglomerates have also entered the mobility sector with SK Telecom reaching 10 million users for its AI-based navigation application called 'T map' and the other two telecommunication firms, KT and LG Uplus, forming a partnership to develop a competing navigation system called 'One Navi'. There are a lot of opportunities in the automotive sector for British big data companies with innovative and price competitive technology in these areas.

Another area where there are opportunities for British data companies is the healthcare sector. There is an open data hub for healthcare data in Korea (opendata.hira.or.kr) which accumulates and distributes various types of data. The hub has an open API which gives access to a wide selection of data including symptom search requests, increase rates in diseases and types of medical treatment received by patients. Although data in the healthcare sector has become more accessible, Korean companies do not currently have the means to process or analyse the data effectively. Other opportunities exist in data analytics for the development of new medicine. This convergence area with AI is one of the focus points of the Moon administration and is therefore expected to grow strongly in the near future.

5.4.1 Case studies – Data in Other Areas

Maeil	
Website	**www.maeil.com**
Problem	How to improve manufacturing plant productivity
Approach	Analysed data from production line to predict accidents and production issues
Outcome	10.1% increase in productivity and 3.7% decrease in water usage
Developed by	Third party consultancy
Overview	Maeil is a major dairy company in Korea. The company used data analytics to minimise the rate of defective products. Maeil implemented data analytics in conjunction with 'deep learning' techniques to analyse how the dairy product assembly line performs under various circumstances, focusing on finding predictable and preventable accidents. The result was a 10.1% increase in productivity and a 3.7% drop in water usage – all of which helped the company to bolster its bottom line.

6. Market Entry Strategies

KEY POINTS

- Direct sales into the large conglomerates is possible but on-the-ground support is strongly advised
- Using a sales team based outside of Korea is difficult due to language and cultural barriers and high expectations for after-sales support
- Partnering with local systems integrators or value-added resellers is advisable for foreign companies
- Foreign companies can apply to participate in government-led projects but there are barriers:
  - Culture, language, business environment, etc.
  - Preference towards local businesses adding at least some value to the products or services

While selling directly to the public sector is difficult for foreign companies, private sector companies in certain sectors can be approached and served directly, even without a local distribution/ SI partner. Marketing agencies, for instance, are relatively open to learning about new data analytics solutions. Major marketing agencies such as Innocean, Cheil or NAS Media already have experience collaborating with foreign technology vendors to offer services to their Korean and global clients. Other data technology companies, such as SK Planet or Daumsoft, are also increasingly collaborative on a global scale

However, UK businesses looking to engage in a strategic partnership or introduce their technology or product to Korea should take into account both business-related and cultural factors before setting out. British businesses can approach the Korean market either through direct sales from the UK, by appointing an agent or distributor or by setting up an office in Korea.

Direct Sales from the UK

The simplest market entry option is for UK companies to sell or license a particular data analytics solution directly to Korean end-users. The main downside of a direct sales approach is the lack of local language and time-zone support as Korean companies tend to be particularly demanding of their partners. This can be mitigated by using a local agent or business development consultancy, such as Intralink, capable of bridging time-zone, language and cultural gaps without the long-term commitment of local incorporation and hiring. Market-specific factors to consider include:

- Do we have a strong differentiator – something that sets us apart from our competitors in the market?
- Do we have a strong track record in other major markets? Korean companies are not easily convinced to use a new, disruptive technology as a first-mover without case studies
- Are we willing to localise the product for the market and/or for local regulations, if necessary?
- Are we ready to provide a Proof of Concept (PoC) at little or no cost to the customer? Korean companies will look to drive the price down and will not commit before proving the value through testing
- How do we provide after-sales support? Korean customers expect high-quality, local-language support

Appointing a Reseller or Distributor

Perhaps a more common way to approach the market is to seek a partnership with an established local company that complements your product, has experience in the target sector and can help navigate the legal environment. A local channel partner, perhaps a systems integrator (SI), can provide services such as pre-sales, sales, consulting, installation, technical training, service maintenance, technical support and system integration in the Korean market. Even large multinationals usually take this route in the early stages of market entry. Market-specific factors to consider when seeking a partner include:

- Does the partner already serve the type of customer that we do?
- Does the partner have a good understanding of the market in general and my particular application?
- Does the partner already offer solutions similar or synergistic to our offering?
- Is the partner focused on short-term wins or will they be able to drive our business in the long run?
- Does the partner have specific experience with public sector projects?
- Are we comfortable communicating with the local partner and are they transparent with us?

Establishing a Local Presence

There are broadly three ways of establishing a local presence: (1) a liaison office, (2) a branch office or (3) a local corporation through foreign direct investment (FDI). Setting up a liaison office is a simple process but a liaison office can only perform non-profit generating activities in Korea such as market surveys, research and development and quality assurance. Setting up a branch office can be a complicated process that requires a lot of documentation to be translated, but it will allow for sales activities and the exchange of revenues with the head office. The most common process for an overseas company to open a branch office in Korea is through FDI where an initial investment exceeding approximately GBP 68,000 is made by the head office, which in return owns stock in the branch. The local corporation leads independent activities and is authorised to perform direct transactions. Market-specific factors to consider when establishing a local presence in Korea include:

- Is our business generating enough revenue in Korea to consider a local presence? Businesses usually consider establishing a local presence after several years of sales (either direct or through a partner)
- Is Korea a strategic market for us, either in terms of securing use-cases or securing further funding?
- Do we need to engage in profit generating activities?
- Will we transfer staff from our head office or hire local staff? In Korea, visas can be difficult to secure for foreign employees and social insurance contributions and severance pay must be paid to all staff that complete one year of employment. An employer's share of these costs equates to 18% of salary
- What location shall we pick for our local presence? Scouting, negotiating and conclusion of contracts are time-intensive processes that often are hard to conclude without local support

In conclusion, the Korean data analytics market offers strong opportunities to UK companies but, whichever option a UK company selects to enter the market, these and other business and cultural considerations must be addressed, and local support often proves invaluable in the market entry process.

For further information

Please contact:

Department for International Trade
Trade.Korea@fco.gov.uk

Michal Waszkiewicz
Director, Sales and Marketing, Intralink UK
michal.waszkiewicz@intralinkgroup.com

Jonathan Cleave
Managing Director, Intralink Korea
jonathan.cleave@intralinkgroup.com

www.intralinkgroup.com

Department for International Trade

Intralink

great.gov.uk

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Any enquiries regarding this publication should be sent to us at **enquiries@trade.gsi.gov.uk**

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