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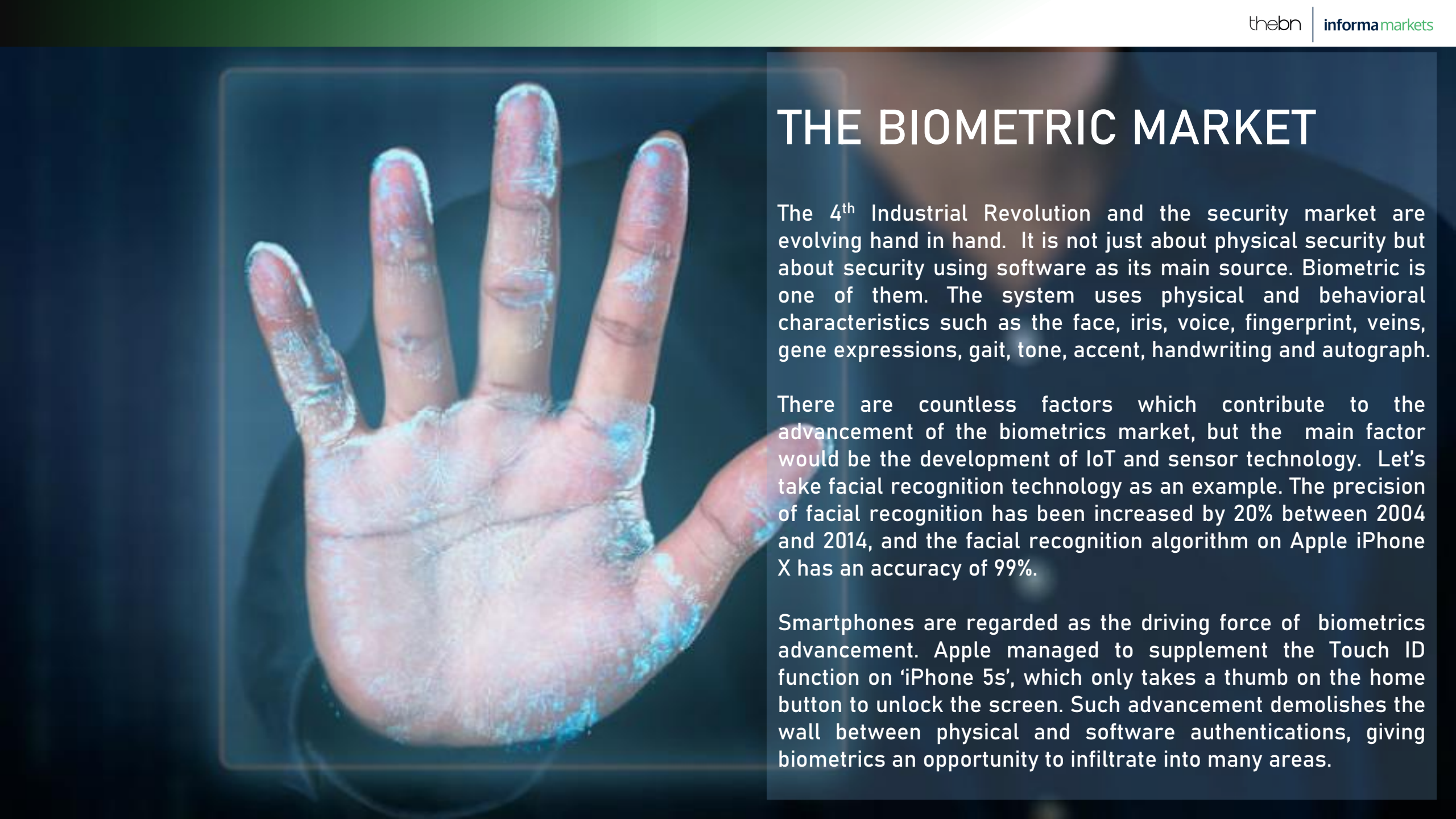
2020 ACCESS CONTROL MARKET IN KOREA



THE BIOMETRIC MARKET

The 4th Industrial Revolution and the security market are evolving hand in hand. It is not just about physical security but about security using software as its main source. Biometric is one of them. The system uses physical and behavioral characteristics such as the face, iris, voice, fingerprint, veins, gene expressions, gait, tone, accent, handwriting and autograph.

There are countless factors which contribute to the advancement of the biometrics market, but the main factor would be the development of IoT and sensor technology. Let's take facial recognition technology as an example. The precision of facial recognition has been increased by 20% between 2004 and 2014, and the facial recognition algorithm on Apple iPhone X has an accuracy of 99%.

Smartphones are regarded as the driving force of biometrics advancement. Apple managed to supplement the Touch ID function on 'iPhone 5s', which only takes a thumb on the home button to unlock the screen. Such advancement demolishes the wall between physical and software authentications, giving biometrics an opportunity to infiltrate into many areas.

BIOMETRIC APPLICATIONS

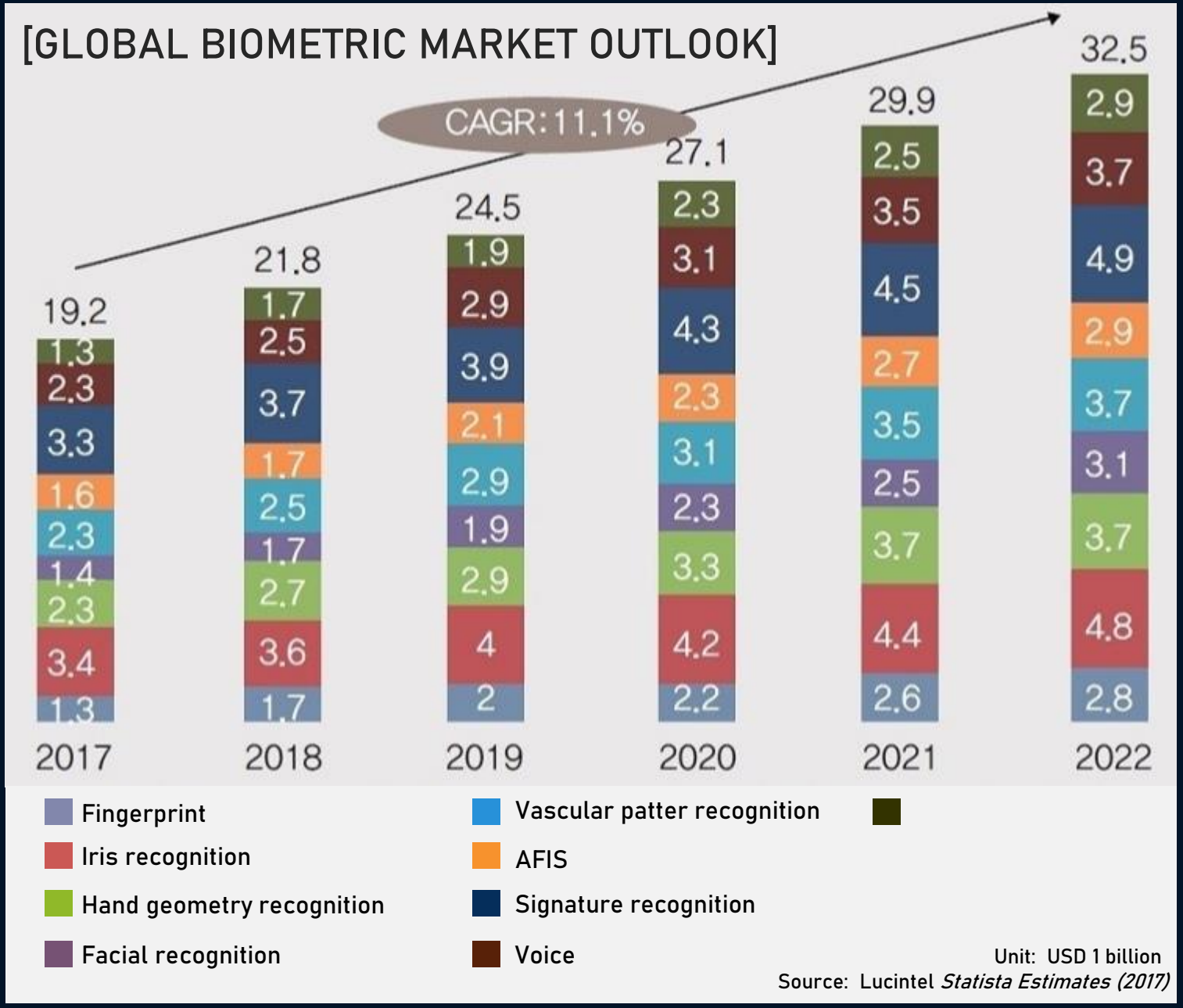
FINANCE	ATM, Mobile banking, Stock exchange, Payment method, etc.
IT SECURITY	Electronic commerce, Information security, Biometric login, Device authentication
COMMUNICATION	Call center, Internet phone, Telephone card
ACCESS CONTROL	Airport (Immigration inspection), Enterprise (time and attendance management)
HEALTH & WELFARE	Patient identification, Record, Telemedicine, Electronic prescription
PUBLIC SECTOR	Distinguishing criminals, Electronic resident permit, Electronic administration
QUARANTINE	Screening (identifying confirmed cases through facial recognition)
ENTERTAINMENT	Categorization and management of portraits, Look-a-likes

Source: KOTRA (2016)

BIOMETRIC MARKET SIZE

According to Statista Estimates, the global biometric market is to grow at a Compound Annual Growth Rate of 11.1%. The market size in 2019 was USD 24.5 billion and the estimated market size for both 2020 and 2022 are USD 27.1 billon and USD 32.5 billion.

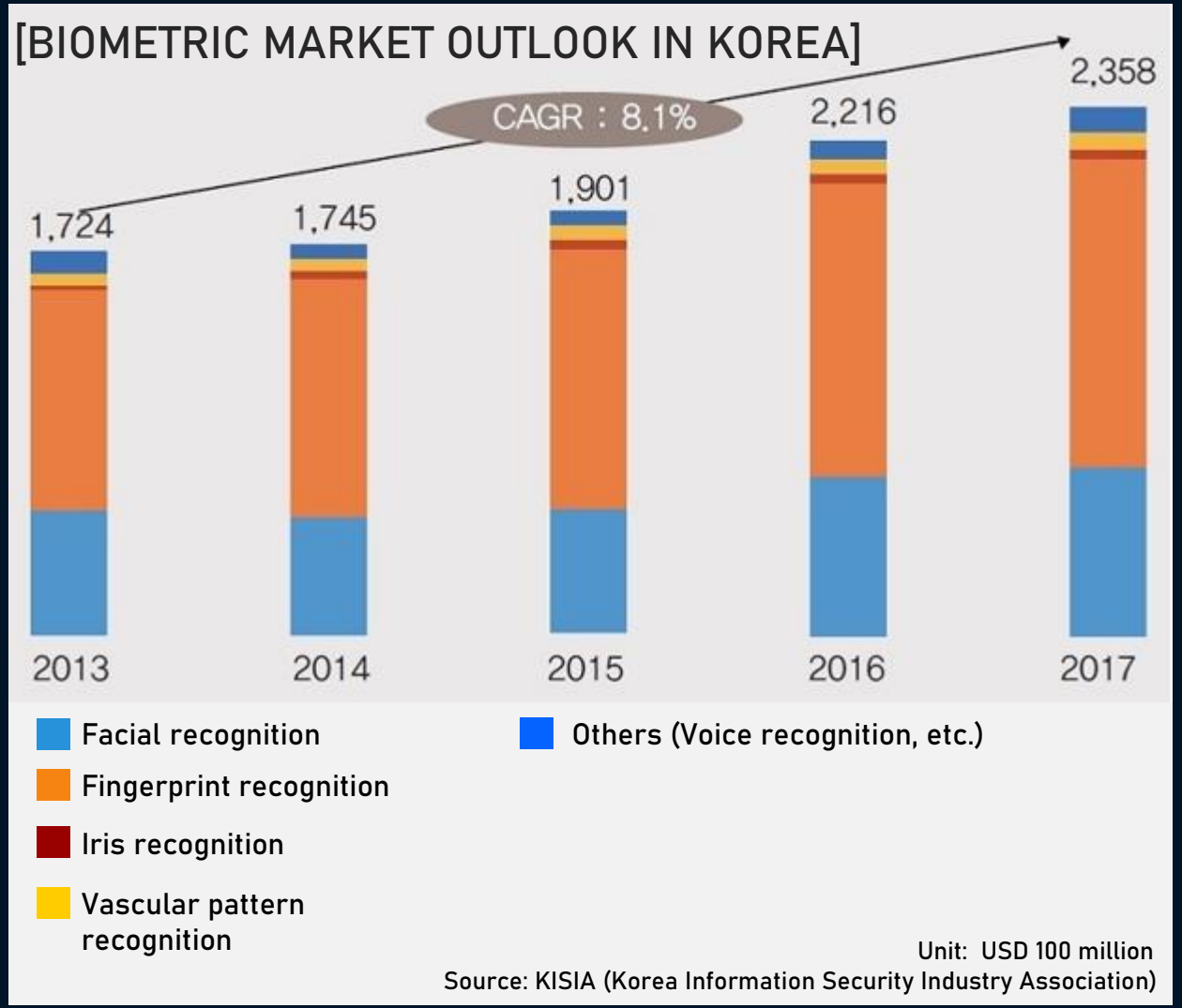
Not only is the application of national digital recognition systems in Singapore and other Asian countries as well as Smart City biometric systems, the main contributors for such growth, but also being aware of the fact that biometric technology is the future of IoT security.



BIOMETRIC MARKET SIZE IN KOREA

According to KISIA (Korea Institute of Science and Technology Information), the biometric market in Korea has grown at a Compound Annual Growth Rate of 14.6% since 2014. Starting off with a market size of USD 190 million (2014), the estimated market size of 2021 is USD 467 million.

The graph provided by KISIA (Korea Information Security Industry Association- right hand side) shows the market growth from 2013 to 2017. Fingerprint recognition has the largest proportion with facial recognition in second place.



THE MAIN TREND IN KOREA

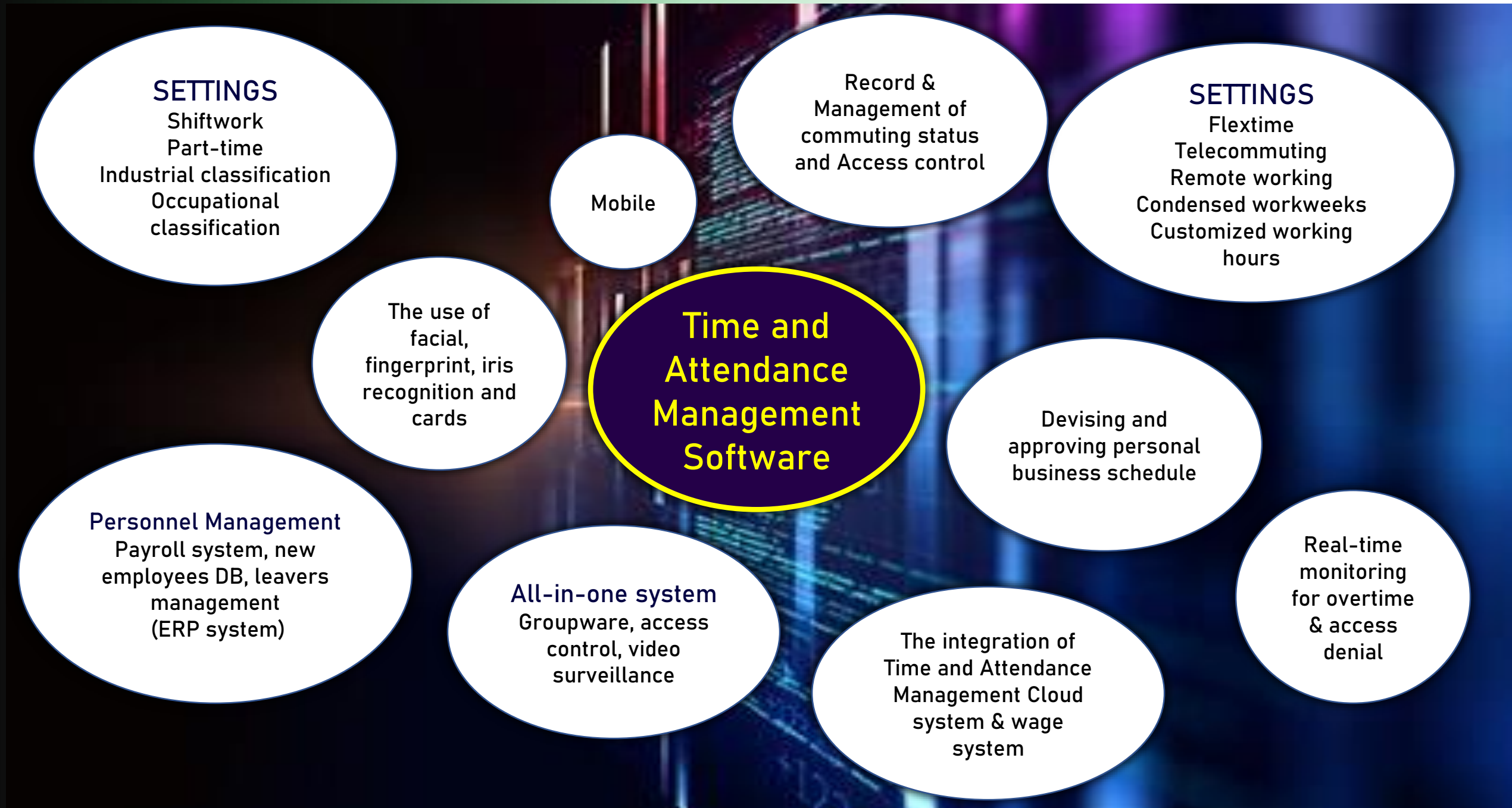
From 52-hour workweek to Biometrics Solutions and IoT Time and Attendance Management

Access control systems such as biometrics and security gates now play a significant role in our lives. ePassports are being used in airports around the world, in which automated immigration systems are not a rare thing anymore. Vascular pattern recognition is used for identification and boarding procedures of domestic flights and CCTV cameras used for access control and crime prevention, not only identify a person but also their gender, age, hair color and other features such as glasses and masks.

The 52-hour workweek bill was passed by the National Assembly in 2018, triggering many access control and biometrics enterprises to prepare for the specific market. The demand for time and attendance management system has gone sky-high and enterprises such as SUPREMA, UNION COMMUNITY, ADT CAPS, and KT telecop are keeping themselves busy with related product launchings.

The 52-hour workweek system not only has a positive effect on the biometrics industry but also on the security gate industry. However these two industries should not be identified as separate ones, but as an integrated solution. Security gate manufacturers are going beyond biometrics solutions, entering the realm of IoT devices. An actual case of biometrics and IoT integrated security gates are being used in the following process.

As the employee passes the security gate via biometrics system, the employee is automatically checked on the attendance list, in which the designated elevator will automatically take the employee to the office. New technology such as security gates being able to identify empty floors and save energy by shutting off the floor's electricity, are currently being developed by security gate manufacturers. This is a clear sign of how grafting various technical functions onto security gates is the pathway for new opportunities.


SETTINGS
Shiftwork
Part-time
Industrial classification
Occupational classification
Mobile
Record & Management of commuting status and Access control
SETTINGS
Flextime
Telecommuting
Remote working
Condensed workweeks
Customized working hours
The use of facial, fingerprint, iris recognition and cards
Time and Attendance Management Software
Devising and approving personal business schedule
Personnel Management
Payroll system, new employees DB, leavers management (ERP system)
All-in-one system
Groupware, access control, video surveillance
The integration of Time and Attendance Management Cloud system & wage system
Real-time monitoring for overtime & access denial

ACCESS CONTROL AND BIOMETRICS MARKET INSIGHT ON KOREA'S PUBLIC PROCUREMENT & ITS SALES PERFORMANCE

Click the link below to view full report
https://www.seconexpo.com/20th/data_file/Korea_Security_Briefing_(June).pdf

MARKET VALUE

According to ABI Research, the market value of the global biometric market is estimated to show a consistent growth rate of 118% (2015), reaching USD 300 billion in 2021. Dmitrios Pavlakis, the Industry analyst of ABI Research, foresees how new biometric factors and technology adoption such as USB connectors, appliances, sensor built in cards, fingerprint · iris · facial recognition on mobile phones, and ATM vascular pattern recognition will be widely used.

The main spotlight not only goes to the advancement of biometric technology, but also to the supply of components of Korean enterprises. On top of this, finding the right biometric systems for Asia, Africa and the Middle East, will result into a more successful foray into the overseas market.

FACIAL RECOGNITION

'Facial Recognition' was probably the most mentioned technology last year. The ranking not only refers to access control, but to the whole security market. Fortified security & simple authentication is what everyone is asking for. Authentication started off with card authentication, then moved onto fingerprint recognition. It was the outbreak of diseases such as MERS, which drew everyone's attention to untact authentications.

More number of people are showing interest for iris and vascular pattern recognition, but due to its relatively cheap installation cost and simple instructions, facial recognition is and will remain as being the most popular. Walk-through and interface synchronized facial recognition system security gates are the two systems to look out for.

Facial recognition also exerts influence on the financial world. According to the 2018 Payment and Settlement Systems Report, cash payments are in constant decline whilst card and easy payments are on the rise. The CAGR for card payments are at 10% and at 70% for easy payments. Ant Financials Alipay QR code payment was indeed a revolution, but they have taken a step further by developing 'Qingting' and launching the facial recognition payment system.

The trend looks similar here in Korea. Facial recognition payment service has been designated as Financial Services Commission's finance innovation and many are busy developing and commercializing the system. ETRI (Electronics and Telecommunications Research Institute) is joining with BC card's digital research institute in order to set foot on a national R&D project of facial recognition payment system. The payment system is a combination of facial recognition technology and decentralized identity, enabling facial recognition payment services at various franchises after a one time registration process. The research team aims to launch its test version in the latter half of 2020.

INNOVATIVE PRODUCTS

Five GT's 'Ufacekey' is the first facial recognition device in Korea to control access with its smartphone integrated call function. The contactless authentication method enables a faster and a more convenient system and the face itself is able to remain as a log history. In The system is capable of saving the images of unauthorized visitors and provides various external interfaces such as TCP / IP, RS-485, RS-232, and GPIO port.

Source: Five GT

Source: S-1

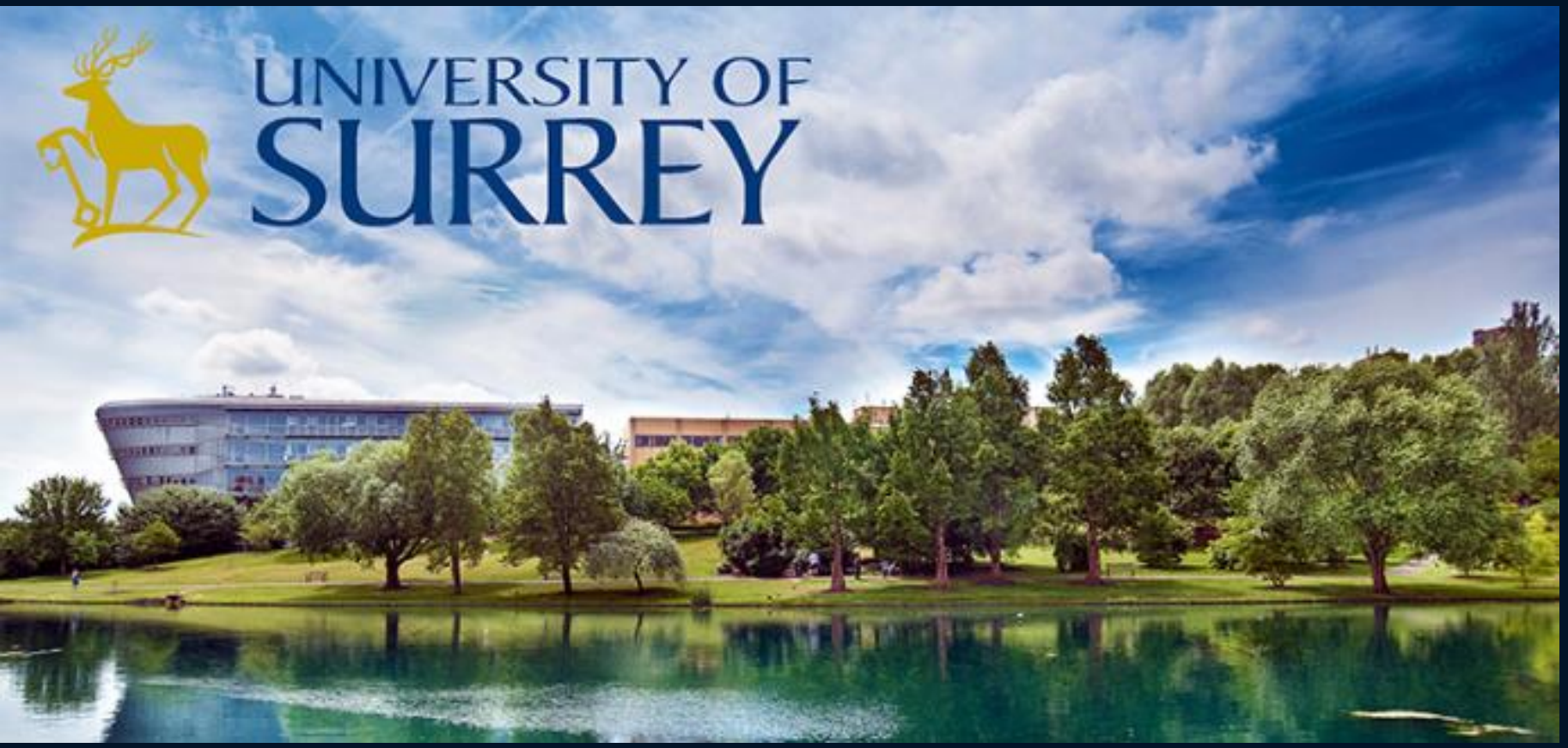
S-1 has implanted its face recognition algorithm into the Face recognition and Smart access control speed gates. S-1's KISA (Korea Internet & Security Agency) certified face recognition algorithm can be used without misrecognitions with an authentication success rate of 99.99%. Despite flow of time, re-registration of biometric information is not needed as AI has the ability to identify faces automatically. Fortified security such as facial recognition paired with access cards or facial recognition paired with password, is of course possible.

There has been many driving academy cases where people have been using fake silicon fingerprints in order to obtain their driving licenses. Sisters with similar facial features and physical characteristics, managed to pass the driving test by sitting on behalf of each other. The result of such fraud was license revocation and disqualification from taking driving tests for two years. Fingerprint recognition systems were very poor and the customers were asked to submit their explanatory materials every time. CMITech's iris recognition systems are industry's first dual iris recognition system to employ face display-based positioning for an intuitive, fast and effortless user experience. With a misrecognition rate of almost 0%, diverse modules are intended for specialized solution integrators to incorporate high accuracy iris recognition biometrics into a kiosk or similar self-service terminal.

Source: CMITech

Source: Union Community

UNION COMMUNITY'S Integrated Biometric Breathalyzer blocks proxy breathalyzing by running the employee authentication on the biometric terminal. Breathalyzer can only be used after facial and fingerprint authentications, where the display of Pass/Fail results controls the access of intoxicated employees. The system is integrated with TNA system and only employees who pass the test may enter the site. Such process ensures workplace safety and legal compliance.



Source: University of Surrey

The application of biometrics is much more diversified in the overseas market

University of Surrey research team has developed a system which identifies those who have consumed or came in contact with heroin. Washing hands does not leave the testee with negative results as the system identifies all those who have shaken hands with people affected by the drug.

Benjilock by Hampton, is the world's first traditional rechargeable padlock with fingerprint technology. It is convenient and easy to use as unlocking happens just with a touch. 10 fingerprints can be stored on the device and can be used up to 1 year on a single charge. A smaller TSA fingerprint padlock for travelling purposes can store up to 5 fingerprints and ensures a safe travel.

Source: Benjilock

Source: Cornèrcard

Cornèrcard's Biometric Gold Visa credit card is a technologically advanced payment card which identifies the legitimate cardholder using biometric fingerprints. Purchases are paid for conveniently and quickly at the point-of-sale terminal by briefly touching the fingerprint sensor integrated into the card. The cardholder's fingerprint is easily registered on the specially designed sensor on the bottom right-hand side of the card. An LED signal, also integrated into the card, confirms the successful capture of the fingerprint. To complete the identification of the legitimate cardholder, the PIN must be entered during the first transaction. Thereafter, the PIN is only used in exceptional cases or where it is not possible to confirm the fingerprint, such as when withdrawing cash from ATMs.

Source: Cornèrcard

CHALLENGES

Biometric authentication is winning popularity due to its simple use and minimal risk of loss. However, low level security is the outcome of such physical characteristics exposure. An example of such are silicon fingerprints. Fingerprints on identity cards are converted into a file format and defining the fingerprint pattern through shaded parts, completes the process of creating a silicon fingerprint. Naturally, there lies a high risk of misusing the fake fingerprints for unlocking a mobile device or payment system.

This is the part where multimodal biometric authentication steps in. However, registering biometric information can be regarded as an exposure of privacy and individuals must understand that biometric information can be hacked as cyber criminals look to steal or spoof biometric data. Therefore, secure storage of the information and cybersecurity enhancement are the two most critical issues in the years to come.

VISIT https://www.seconexpo.com/20th/eng/main.asp for more **INSIGHT ON THE CURRENT SECURITY TREND**

SECON 2021 OVERVIEW

Date	10 – 12 March, 2021
Venue	Hall 3 – 5 KINTEX, Korea
Organiser	SECON Organising Committee
Fair Manager	Informa Markets BN Co Ltd
Official Media	BOANNEWS, Security World

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