

Responding to Business Cyber Threats with eXTended Threat Intelligence (XTI)

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#cyberthreat #XTI #extendedthreatintelligence #CTI #cyberthreatintelligence



Introduction

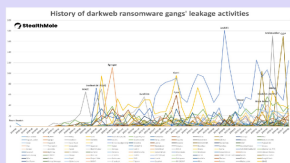


Figure. History of dark web ransomware gangs' leakage activities(2019-), StealthMale@protonmail.com

Ransomware, APT, and phishing attacks have increased in the wake of the COVID-19 pandemic, targeting expanded attack surfaces, and cyberattacks on businesses through the organized activities of hackers are on the rise.

As these attacks are being prepared and executed, there is a need to watch and monitor the various activities of the attackers.

To briefly define XTI (eXtended Threat Intelligence), it is a new concept platform that enables users to collect and monitor information on threats (Risk) related to business operations such as cyber threats, leakage of corporate secrets and customer information, and reputation information based on existing Cyber Threat Intelligence (CTI) in the modern business ICT environment that requires all-round security.

Recently, DX (Digital Transformation) has been accelerated by COVID19, which has caused a rapid transition to cloud adoption due to telecommuting, remote work, and a shift to a non-face-to-face environment. In this process, various forms of cyberattacks are occurring due to the exposure of corporate information assets and data in the process of data transfer to the cloud and the expansion of attack points to employees due to non-face-to-face and remote work.



Figure. Passport details, online accounts, and passwords exposed on the dark web

eXtended Threat Intelligence (XTI)



Figure. Analysis topology of CTI platform, ThreatRecon Platform, NSHC Inc.

1. Cyber Threat Intelligence (CTI)

Before explaining XTI, it is important to understand Cyber Threat Intelligence (CTI). CTI is a platform or process for collecting, analyzing, and sharing information about cybersecurity threats. It is a series of platforms or processes that analyze cyber threats collected through threat hunting and various OSINT activities by cyber threat analysts, and based on this, companies build early warning systems for security threats and prepare countermeasures against threats. In particular, it is used to prevent or prepare for security threats by analyzing the behavior patterns of cyber attackers, the tools they use, and the purpose of their attacks.

2. Extended Threat Intelligence (XTI)

eXtended Cyber Threat Intelligence (XTI) takes the approach of collecting existing CTI data, including external Attack Surfaces, including the Surface Web and Dark Web, and creating context and enhancing security from the collected data. The scope of collection and analysis covers the entirety of an organization's digital assets, networks, and other connected systems. This enables organizations to understand and respond to security threats from a more holistic and integrated perspective.

The impact of COVID-19 and the changing landscape of remote work. The COVID-19 pandemic has led to an unintended and forced shift to remote work for organizations, which has expanded the perimeter of their networks. This has expanded the attack surface and increased security threats. The second is the acceleration of digital transformation (DX). Digital transformation refers to the transformation of an organization's business processes, culture, and user experience through digital technologies. Cloud-based remote and non-face-to-face work environments are accelerating DX, and threats such as changes in the structure of corporate networks and systems and data exposure have arisen in the process of DX. Third, the security paradigm is expanding. The existing perimeter network security is an SOC-centric security control system that centers on the security of the internal network, which limits the response to attacks from the outside.

These changes in the environment have led to a paradigm shift in security. Attack points have expanded and threats have increased, while perimeter networks and SOC-centric control security operating systems have been unable to accommodate these changes. In addition, the limitations of systems and human resources have created cybersecurity gaps. Changes in the digital environment have expanded the scope of enterprise security monitoring, requiring monitoring and analytical response to vast amounts of cyber threat information.

XTI can help you respond to changes in the security paradigm, upgrade your organization's security system, and build an effective external cyber threat response system.

3. CTI vs XTI

Classification	Threat Intelligence	Extended Threat Intelligence
Definition	<ul style="list-style-type: none"> The process of collecting, analyzing, and sharing information about security threats 	<ul style="list-style-type: none"> The process of identifying external attack surfaces and sharing contextual data to improve security.
What to analyze	<ul style="list-style-type: none"> Cyberattacker behavior patterns, attack indicators (IoCs, attack tools, etc.) 	<ul style="list-style-type: none"> Your organization's digital assets, networks, and other connected systems as a whole. Attack surface, including surface web and deep/dark web (DDW) assets from an attacker's perspective.
Purpose	<ul style="list-style-type: none"> Prevent or stay ahead of security threats 	<ul style="list-style-type: none"> Understand and respond to security threats from a more holistic and integrated perspective



Figure. XTI data sources comprising TaaS, THE BOM XTI Platform, and NSHC Inc

4. Threat Intelligence as a Service(TaaS)

XTI is more of a service than a platform (software). In the existing corporate security environment, where the security paradigm has changed and professional analysts are scarce, it is not easy to operate XTI effectively even if it is introduced. In order to operate XTI effectively, a specialized collection and analysis organization for XTI must be formed and operated, and it must play a role in providing information and responding to threats through collaboration with the existing security team. While it is possible to organize and operate an XTI analysis organization with sufficient information security staff and budget, there are many practical challenges. A proposed solution to these problems is TaaS (or Managed Detection and Response, or MDR), which leverages external cyberthreat intelligence analytics services.

The basic concept is the same as outsourcing the operation of the existing system of control (SOC). Or, more accurately, it's an extension of your existing security controls. Security services are provided by combining XTI analysis data with the operating data of the existing SOC, and the data provided here is not just an indicator, but a context (evidence) containing actual threats, which is provided and utilized through constant and active security analysis activities by experts.



Figure. TaaS Service Composition, THE BOM XTI Platform, NSHC Inc.

Conclusion

While the existing information security system is a defensive response based on a water-based concept called perimeter network security, cyber threat intelligence is a proactive response through continuous search and reconnaissance to check the fence and collect information about potential threats outside the asset. In the modern business environment, which is thoroughly based on ICT technology, the decentralization of information assets due to the introduction of the cloud has expanded the attack points, and corporate security organizations are facing increasing concerns. This is because it is not enough to introduce a cyber threat intelligence system with advanced AI. AI is only a guide, and it is strictly up to the analyst to identify, analyze threats and suggest countermeasures. The software market is shifting to SaaS, including cloud services. XTI services are part of that.

Cyberthreat intelligence is a critical decision support system for modern businesses. Continuous monitoring of cyberthreats plays a critical role in early detection of threats so that business impact can be assessed and prepared for. Regardless of the size or nature of your organization, cyberthreats should be monitored.

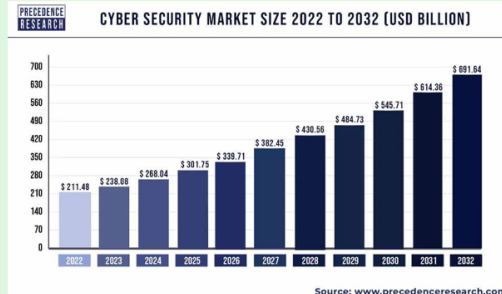
Industry Trends

Cybersecurity Threat Analysis for 2023 and Predictions for 2024

#cybersecurity #cybercrime #credentialstuffing #phishingattacks #smishing



Changes in AI technology and the security service market



According to a study by Precedence Research, the global cybersecurity market size was valued at USD 214.48 billion in 2022 and is expected to exceed USD 691.64 billion by 2032, growing at a compound annual growth rate (CAGR) of 12.58% during the forecast period from 2023 to 2032.

The rapid development of generative artificial intelligence technology, with ChatGPT as a hot topic, has brought evolution and innovation in various fields. However, it also carries the risk of being used for various cyberattacks, such as vulnerability identification, social engineering, and voice falsification, as well as malware creation, which can be easily done by users without specialized security knowledge.

AI can be used to generate fake content or messages that look real, or to develop sophisticated phishing attacks to steal personal information. AI can also be used to bypass security systems, automate and optimize network intrusions, and threaten cybersecurity. The methods of cybercriminals using AI are constantly evolving, and security strategies are becoming increasingly important. AI technology can utilize complex algorithms and data to generate realistic fake content that can be used to trick security systems. This enables new types of cyberattacks that are difficult to detect using traditional security methods, and security professionals need to understand AI technology and take appropriate measures to counter these threats. As a result, the importance of AI-enabled defense technologies in the cybersecurity market is becoming more prominent.

Let's take a look at the "Cybersecurity Threat Analysis in 2023 and Forecast for 2024" released by the Ministry of Science and ICT and the Korea Internet & Security Agency (KISA).

Cybersecurity Threat Analysis in 2023

- 1 Security Program Vulnerabilities and Supply Chain Attacks on SW Developers Expand: There have been many software supply chain attacks targeting programs that must be installed and updated, such as online financial transaction security authentication programs. As these SW supply chain attacks are difficult to detect and take action against and have a large impact, MSIT and KISA are focusing on preventing damage through security patch development and public guidance in cooperation with related organizations.
- 2 Evolving messenger impersonation attacks targeting personal information and re-spreading damage: Phishing attacks disguised as popular portals or messengers have increased, as well as secondary damage cases using leaked personal information. Personal information leaks and financial damages are also occurring due to credential stuffing attacks, an attack method that attempts to log in by randomly substituting user account information collected from other sites.
- 3 Ransomware attacks and financial blackmail for disclosing trade secrets: Although the number of ransomware attacks has decreased, they have become more malicious, including stealing and encrypting confidential information and demanding ransom. In preparation, it is important to strengthen attack surface management and establish backup servers, and KISA and the Korea Information Security Industry Association offer ransomware response programs.

Cybersecurity Threat Predictions for 2024

- 1 Stealthy SW Supply Chain Attacks: Hackers are using new attack strategies to target open source and developers. They take over developer systems by impersonating popular open source and distributing tampered code. Once the malicious SW is distributed, the organizations that use it don't even realize it's been compromised. This can cause cascading damage not only to the organization but also to other users such as customers.
- 2 Increased potential for cybercrime using generative AI: Rapidly advancing generative AI technologies have made it possible for anyone to engage in cybercrime, even if they are not an expert, by creating malware and forging voices.
- 3 Increased OT/ICS and IoT security threats: The integration of information and communication technology into major infrastructures has increased security threats due to the increasing connection between OT (operational technology), ICS (industrial control system), and IoT (Internet of Things) systems. This can pose a direct threat to the public by stealing critical information of key infrastructure or spreading malware in the system operating environment.
- 4 Increased cyber threats using political and social issues: In 2024, when several domestic and international elections are scheduled, the activities of hacking groups targeting these political events are expected to increase. Various forms of cyberattacks are expected, including activities to leak critical information of opposing parties and attacks that can cause chaos and disruption to society as a whole.

They added that it is important to take measures to prevent and respond to cyber attacks, establish a backup system, implement a rapid recovery process, and strengthen cyber defense capabilities. MSIT and KISA are working with related organizations to detect and prevent attacks, check vulnerabilities and strengthen server security, and support ransomware response, and are planning to introduce a zero trust framework and release SW supply chain security guidelines.

As such, we need to be thoroughly prepared for increasingly diverse and sophisticated cyber threats. In order to build a safe digital future, not only should we prepare by utilizing the latest security technologies and information, but also users should always be alert and use the Internet with caution, such as not clicking on files from unknown sources.

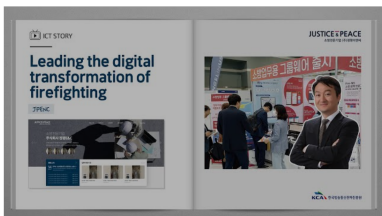
Reference

- Navigating The Cybersecurity Landscape In 2024
- Navigating The Cybersecurity Landscape In 2024
- Cyber Security Market - Global Industry Analysis, Size, Growth Trends, Regional Outlook, and Forecast 2023-2032

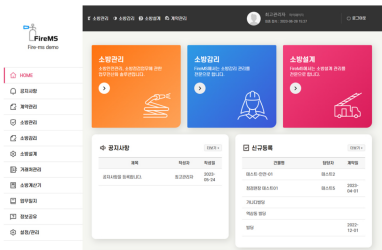
JPENC

Core Technologies and Achievement Highlights

- Introducing Fire-MS, the only domestic fire service computerization solution in Korea (safety management, inspection, fire design, fire supervision)
- BFCS, a facility management solution designed to achieve safety of individual households in apartments and compliant with the Fire Services Act
- A contracted supplier of IT solutions to the Korea Fire Facility Association Development of Fire-MS, an IT solution for design and supervision of firefighting



For the digital transformation of the firefighting industry



Main screen of Fire-MS, the only domestic computerized firefighting solution of its kind

JPENC is licensed in firefighting design, supervision, construction, facility management, and flame-retardant treatment, in accordance with the Fire Services Act. With a foundation in firefighting safety engineering, JPENC develops legally compliant solutions for firefighting and firefighting facility management. Recognizing the digital transformation gap in the firefighting industry, JPENC has expanded its portfolio to offer IT software solutions for a more intelligent firefighting sector. Their offerings include Fire-MS, a solution for firefighting facility management, design and supervision; BFCS, a solution for building firefighting and safety management; IP-Base, an automated solution for firefighting and earthquake resistance design; a Fire Services Act app and a fire safety inspection app. JPENC's innovative management and technological advancements have garnered recognition, and the company is ISO-compliant. They also hold approximately 40 intellectual property rights, including Korean and international trademarks and patents.

Fire-MS, a solution optimized for onsite operations



Photo of participation at the 8th Fire Tech-Korea Industry Trade Fair

Fire-MS (Fire safety Management System) was developed to enable systematic management across firefighting activities, including inspection, safety management, design, and supervision. It links with PCs and mobile devices to allow the user to perform and manage activities whether in the office or out in the field. Fire-MS has been lauded for improving the efficiency of firefighting activities, making firefighting activities more straightforward, and increasing convenience in the management of sites. Fire-MS is a solution developed to optimize the majority of tasks required in various fields related to employee management, on-site management, inspection scheduling, visit scheduling, on-site location verification, checklist registration, and process management. It is designed to cater to the specific characteristics of professional engineering work, enhancing efficiency and convenience. Additionally, Fire-MS provides detailed features such as systematic history management of safety management target sites.

Verification of the efficiency and effectiveness of the solution program is also essential

JPENC, recognizing the need for digital transformation in the firefighting industry, has expanded its business to include IT software development. In order to ensure the effectiveness of their solutions, they place a strong emphasis on strict organization of development activities and the importance of proof of concept (POC). POC is a crucial process that validates the feasibility and technical effectiveness of a concept before its implementation. To validate their digital transformation solutions in real-world applications, JPENC actively sought partnerships with companies willing to test and provide feedback. Through their participation in the government's ICT Funding Project, JPENC was able to connect with companies involved in firefighting facility management, firefighting design, and firefighting supervision. These collaborations allowed JPENC to gather valuable feedback and insights from these companies regarding the specific functionalities they sought in an IT solution for firefighting. Validation of firefighting management functions and other functions took place in the course of the development of Fire-MS, resulting in needed changes in Fire-MS's utility and user interface. Functions were added to improve user convenience, and the development was audited on working level and management level. POC with professionals in fields related to firefighting allowed for the tuning of Fire-MS.

Utilizing various know-how and experiences in fire-related solutions

The firefighting industry has faced ongoing changes in fire safety laws, yet it lacked the necessary IT systems to effectively respond to these changes. Despite advancements in information technology, the firefighting industry has largely remained traditional in its approach. To lead new changes, JPENC develops and distributes BFCS, a facility management computerized solution specialized in firefighting facility management, Fire-MS, a computerized program for firefighting facility management, design, and supervision business, IP-Base, an automatic firefighting and seismic design program, the newest Firefighting Law App, and the Fire Check Calculator App. JPENC is actively collaborating with a diverse range of institutions and companies to supply the firefighting industry with these innovative solutions. JPENC is on track with the digital transformation of firefighting to keep everybody safe. The future of the firefighting industry looks bright with JPENC's innovative solutions.

ICT Funding Project

- **Dedicated Institution**: National IT Industry Promotion Agency
- **Business Objective**: Fostering an industry-integrated digital transformation specialist company
- **Business Description**: Fostering an industry-integrated digital transformation specialist company

Company Information

- **CEO**: Kim Kyunglin
- **Type of Business**: IT software development, firefighting facility design/installation/management, manufacturing
- **Year of Establishment**: 2015. 05
- **Website**: sobangnet.com

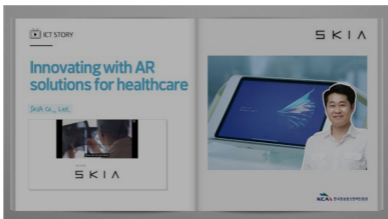
TIME LINE



SKIA Co., Ltd.

P Core Technologies and Achievement Highlights

- Designated as an Industry 4.0 Innovative medical device by the Ministry of Food and Drug Safety
- Completed navigation clinical trial with Korea's first non-marker medical AR navigation
- Development of non-face-to-face collaboration solutions Selected as AI voucher support project supplier



Medical AR technology in the spotlight

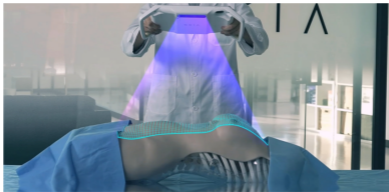


Photo of a human dummy being scanned to project medical images over it for educational purposes.

Medical augmented reality(AR)technology is spotlighted as the foundation of future medical technology by realizing patient-specific treatment with fast and accurate diagnosis. The Ministry of Health and Welfare is carrying out a project to develop medical twin technology by investing a total of KRW 13.5 billion for about five years until 2026 with a view to establishing a digital-based medical system in the future, medical AR technology is expected to bring innovative development to the medical ecosystem through wide-ranging applications such as non-face-to-face treatment, real-time monitoring and treatment process simulation. SKIA Co., Ltd. is developing a 3D medical navigation AR solution for surgery and procedures that directly projected the lesion image from the CT/MRI examination, which used to be seen on a two-dimensional monitor, onto the patient's body using augmented reality without a marker, and shows the location of lesions in three dimensions accurately. The product's selection into TIPS, a technology start-up support program by the Ministry of SMEs and Startups in 2018 designated it as an innovative medical device by the Ministry of Food and Drug Safety in 2020 in recognition of its technology. In 2020, we also completed U.S. patent registration for a method of implementing medical image AR in a non-marker format. In 2021, the company was selected as a Johnson & Johnson QFC excellent company, and has been mentored by Johnson & Johnson so far. Moreover, the company is poised to enter the global market by participating in international medical exhibitions such as CES, RSNA, and KJMES and reaching out to various global companies. Currently, in South Korea, exploratory clinical trials have been completed and confirmatory clinical trials are being prepared. SKIA has conducted research with the goal of developing technologies that combine with other medical devices such as robotic surgery in the long run. If the patient's body is recognized and coordinate values are unified and applied to multiple medical devices, it's possible to check how far the medical device has entered our body, just like a car navigation system. With the warm reception it has gotten abroad, we are preparing for FDA approval, after which we can expect annual profits of about USD 150 million accordingly.

A safer and more accurate AR solution

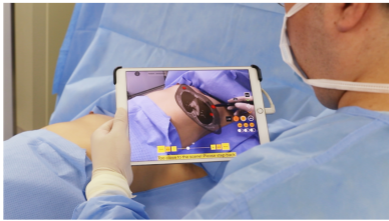


Photo of projecting a patient's medical image over the body using a non-marker AR method.

SKIA participated in the 5G B2B Service Vitalization project to contribute to the improvement of people's living convenience by providing a safer and more accurate private medical guide service. It is possible to implement augmented reality with the display device's calculation function to match and track DICOM(digital imaging and communications in medicine) images with the patient's body. To provide more medical information in 3D volume to clinicians, a communication environment faster than Wi-Fi was needed. It was intended to project a much more complex and precise 3D medical image in real time expeditiously by performing volume rendering of even a patient's detailed medical information. As an infrastructure suitable for security and high-capacity, high-speed service, the 5G specialized network is very suitable for hospitals where personal information is important. Through this leading 5G industry convergence project aimed at discovering a private commercialization model for effective 5G B2B market vitalization and resolving technical and economic uncertainty as to new 5G technology, SKIA is providing safe and accurate private medical guide service based on 5G. Moreover, SKIA has not only created jobs, but also filed one domestic patent and one application, while also participating in 2022 RSNA(Radiological Society of N.A. Conference) to publicize SKIA's solution and 5G-specific network, and seizing opportunities to build overseas market presence by collaborating with global companies.

Increase reliability through validity demonstration

To advance the solution, a demonstration process is required, and clinical trials involving patients must be approved by the Institutional Review Board(IRB) in regard to clinical research ethics. Usually, IRBs take several months from application to approval. In comparison, the task period was a relatively short six months, so the process of recruiting patients for the number of demonstrators and confirming the surgery schedule was not easy given such a brief verification period. Clinical trials for medical device certification present challenges, expending a lot of time and costs without any business sales until certification. Therefore, it was necessary to actively utilize projects such as the ICT fund. At the same time, there were moments when SKIA's technological prowess was recognized in this process. In clinical trials, lesions that went undetected by ultrasound were found through SKIA's solution, allowing the patient to avoid reoperation. The company capitalized on the opportunity to prove the accuracy of its solution by convincing the supervising doctor who said, 'I will always trust SKIA products in the future. SKIA will continue to take on challenges and serve as a stepping stone to create a safe and accurate medical ecosystem.'

P ICT Funding Project

- **Dedicated Institution** National Information Society Agency
- **Business Objective** Establishing foundation for 5G industry convergence
- **Business Description** Visualizing the market for 5G B2B service

P Company Information

- **CEO** Lee Jongmyung
- **Type of Business** Development and supply of industry software
- **Year of Establishment** 2018. 09.
- **Website** www.skia.kr

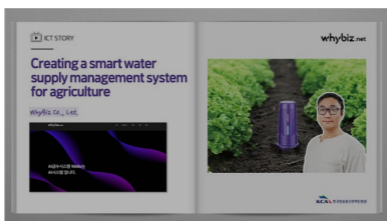
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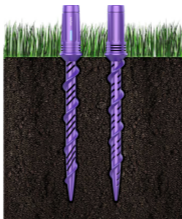
WhyBiz Co., Ltd.

P Core Technologies and Achievement Highlights

- Developed key solutions for long-distance wireless communication
- Developed a new big data and AI market in Korea by commercializing smart farm big data analysis and collection software
- Contributed to strengthening the competitiveness of domestic software, data, and AI (intelligence information) product
- Developed the world's first soil moisture sensor that absorbs moisture



Lack of smart farm technology for 'bare ground' where most agricultural



Hwasubun uses a moisture sensor to measure the amount of moisture by absorbing water like the roots of a plant, while also analyzing the measured data and supplying water to the plants.

Agriculture is a national key industry that determines the existence of a nation. However, agricultural productivity is declining due to various reasons such as excessive person-centered farming, abnormal climate caused by climate change, and decline in population. Smart farm technology is attracting great attention as an alternative to solving this problem. However, smart farm technology is mostly limited to greenhouses and plant factories and has not been widely applied to the bare ground where large amounts of agricultural products are produced. As a startup established in December 2021, WhyBiz Co., Ltd. develops and supplies water supply systems specializing in urban agriculture and bare ground agriculture. WhyBiz develops soil moisture sensors and wireless communication modules at its own affiliated research institute. In particular, the patented moisture absorption moisture sensor automatically supplies the appropriate amount of water at the appropriate time, since the sensor can measure moisture in the soil accurately. Based on this original technology, WhyBiz develops even agricultural decision-making systems in addition to moisture meter and AI water supply device. WhyBiz also develops various agricultural-related services by securing advanced technologies such as communication and analysis.

Developed 'Hwasubun,' an integrated water supply platform



The Hwasubun system can be applied not only to outdoor smart farms, but also to home gardening and office gardening.

The Hwasubun system performs various functions from soil moisture status measurement to automatic water supply. The system can be applied to professional farmers and city farmers (vegetable garden). Its farming helper function based on AI enables novice farmers to produce crops stably. In particular, as the system is equipped with a moisture absorption sensor, the system automatically supplies water by accurately measuring the condition of the soil. Time-based conventional automatic water supply systems supply water according to the set time but do not reflect changes in climate. In contrast, a moisture sensor in Hwasubun absorbs water like the roots of a plant, measures the amount of water, and analyzes the measured data to decide automatically the time to supply water to the plant and perform automatic water supply. Hwasubun was developed by an accidental discovery. While working as a researcher at a company, CEO Jeong Seungbaek found a potted plant in the lobby. When he saw that water was overflowing from the pot, he began to think about how to control water easily. He was also reminded of persons watering a large field manually, so he realized that a water supply platform using AI can be a blue ocean. With this opportunity, he challenged himself to start a business.

Advanced technology with a connection established by the ICT Funding Project

As Hwasubun is installed on bare ground and it operates for more than a year, a long-distance communication module must be developed to apply the system to large-scale farms. WhyBiz participated in the ICT Funding Project to receive support for technology and equipment necessary for the development of the module and got to receive help from the Radio Engineering Lab of the Korea Communication Agency. The support included mentoring and development by highly educated and experienced experts who cannot be easily hired by SME. The Korea Radio Agency provides technology guidance and technology development support by matching related field experts among its expert group with companies. Through matching with Seonggil University researchers, WhyBiz could receive the technology guidance necessary for Hwasubun development. Currently, WhyBiz is accelerating the commercialization of Hwasubun. The excellent technological prowess of Hwasubun has been proven by the awards it won. Hwasubun won a bronze prize at the 2022 German International Trade Fair (ENA) and entered VentureNara. Hwasubun also participated in the K-Smart Farm Roadshow hosted by KOTRA and received favorable reviews from many Central Asian countries such as Kazakhstan, Azerbaijan, and Uzbekistan. Those countries decided to conduct joint research that was possible because WhyBiz could secure excellent technological prowess through the support project.

Easing farmers' burden by introducing the subscription economy service

Until recently, many farmers' working conditions were very poor, and the labor intensity was quite high. Water should be supplied at the right time, adding a burden to farmers. WhyBiz devises various plans for more farmers to be able to use Hwasubun. First of all, WhyBiz is thinking about a subscription economy-type service to lower the initial introduction cost of sensors and water supply systems. Through this service, customers can reduce the initial installation charges, product purchase costs, and maintenance fees, and WhyBiz can develop sustainable services by securing a cash cow. 'Service enhancement' is the next step. WhyBiz plans to expand the service such as an expert matching service that enables general farmers and novice farmers like city farmers to solve various problems using its own platform Hwasubun. WhyBiz wants to help farmers take the lead in realizing a green city and a carbon-free city by cultivating plants and crops, and solve water shortages in many countries around the world. We expect their efforts to play a role in pioneering the promotion of agriculture in Korea and promoting K-Farm to the world.

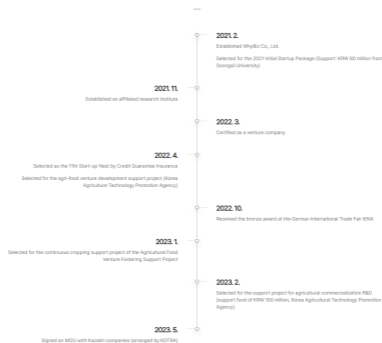
P ICT Funding Project

- **Dedicated Institution** Korea Radio Promotion Association
- **Business Objective** Creating new industries and fostering SMEs based on radio
- **Business Description** Supporting the operation of common radio engineering lab for SMEs

P Company Information

- **CEO** Jeong Seungbaek
- **Type of Business** Other wireless communication device manufacturing
- **Year of Establishment** 2021.2.
- **Website** whybiz.net

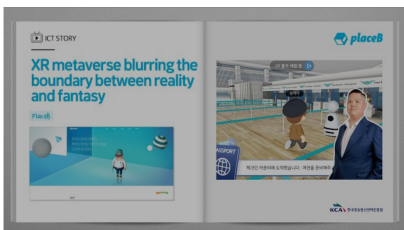
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PlaceB

Core Technologies and Achievement Highlights

- Technologies for VPS-based metaverse service planning/development and AR navigation systems
- Software, AR/VW, and metaverse services and technologies
- Securing metaverse platform technology for linking handheld VR force feedback haptic controller technology



A looming fantasy world



Augmented reality(AR)and virtual reality(VR)are technologies that enable the creation of immersive and realistic virtual environments on screens or through devices. When these two technologies are combined, they give rise to mixed reality(MR), where virtual elements are seamlessly integrated into the real world. Additionally, extended reality(XR)is a term that encompasses the combination of AR,VR,and MR,referring to the overall spectrum of immersive technologies. These technologies find applications in various industries such as gaming,animation,digital imaging,e-learning,and more. The demand for AR,VR,and XR is rapidly increasing,leading to the creation of thriving markets and opportunities for innovation in these fields. According to the global market researcher Precedence Research,the XR market was valued at USD 36,140 million in 2022,and will grow about tenfold to USD 345.9 billion by 2030. It is worth noting that Korea's contributions to the global XR market are slight,at under 5%. XR is a globally anticipated technology,so more Korean companies should get involved in it.

A veteran in AR, VR, and XR services



Geospatial information-based XR navigation service developed by Place B through 'XR Metaverse Incheon Project'

PlaceB is a Korean company developing XR technologies. After a major break planning and developing SK Telecom's AR service platform,PlaceB steadily built a repertoire of AR,VR,and XR technologies over 10 years. Some of its notable technologies are the Bstick, a VR haptic controller,a coexistent reality 4D service, a multi-user interaction and data synchronization technology, and a bevy of technologies for service quality improvement. In 2019, it participated in a watershed 5G project and developed a program running on a visual positioning system(VPS), and developed a VR service using a multi-modal sensory interface for a GS-EPS biomass power plant. From these experiences, PlaceB realized the potential and strengths of VPS-based XR technology. Services that deliver lifelike experiences are possible with VPS-based XR technology. At present,the metaverse is largely VR-driven and revolves around socializing and gaming,but combining XR and the metaverse can produce technologies and services that would revolutionize public services and convenience services,creating whole new markets.

An XR metaverse a reality

Based on these experiences,PlaceB participated in the'XR Metaverse Incheon Project',supported by the ICT Funding Project. The project aimed to construct 3D spatial information for key locations in Incheon, including Incheon International Airport, Gaehanggang, Songdo, and Byeong Station. The project involved developing spatial information-based AR navigation services, doorent services, and realistic VR services. Additionally, an XR Software Development Kit(SDK)was distributed, providing a foundation for the development of various additional services. PlaceB went into the project determined to demonstrate its advanced positioning technologies and the XR metaverse platforms and services that can be achieved with its technologies. It had to work on a tight schedule to create data,develop a positioning platform, and develop services using the supplied software development kit, but went on to successfully demonstrate the application of indoor/outdoor positioning to an XR metaverse and the infinite possibility of related new developments and markets.

The future of the XR metaverse

Even with projects like the 3D Incheon project and the biomass power plant project under its belt,the XR metaverse is still in its nascent stages. The concept of XR itself is just beginning to spread. An XR metaverse powered by indoor/outdoor positioning technology is virtually unheard of in other countries. However, industry leaders such as Google and Apple recognize the market potential of XR and are investing significant resources in related developments. As VPS-based XR metaverse platforms and services are still technologically immature and users would find many flaws in them, PlaceB is planning to identify the technological requirements and to implement regular upgrade of its platforms. It is expanding services and creating new ones around the functions of the XR metaverse services and back-end platforms it has developed. Taking part in the XR Metaverse Incheon Project, it gained valued peers in the likes of Naver Cloud, Naver Labs, Strato, and Futuregen C-Planet, with whom it will be developing new services and platforms.

ICT Funding Project

- **Dedicated Institution** National IT Industry Promotion Agency
- **Business Objective** VR/AR content industry development
- **Business Description** VR/AR content industry development

Company Information

- **CEO** Ko Kihnam
- **Type of Business** Ko Kihnam
- **Year of Establishment** 2014. 04.
- **Website** www.placeb.com

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