Al-Powered Live-Tech Blurs the Boundaries of Communication and Markets

#Live-Tech

#Livetact Gen 2

#e-commerce

#virtual humans

#STT

It's time for Livetact



Since the coronavirus pandemic, people have become accustomed to non-face-to-face communication and non-face-to-face relationships, and our entire lives are undergoing dramatic changes. In this reality, the rapid development of information and communication technology, namely cloud technology, high-speed internet, and streaming technology, has led to the growing pain of choice, the desire for undistorted information, and the need for immediate problem solving amidst the flood of information and products. Live communication, which is a real and immediate way of communicating, is gaining traction, leading to the explosive development of live commerce centered on the consumer market.

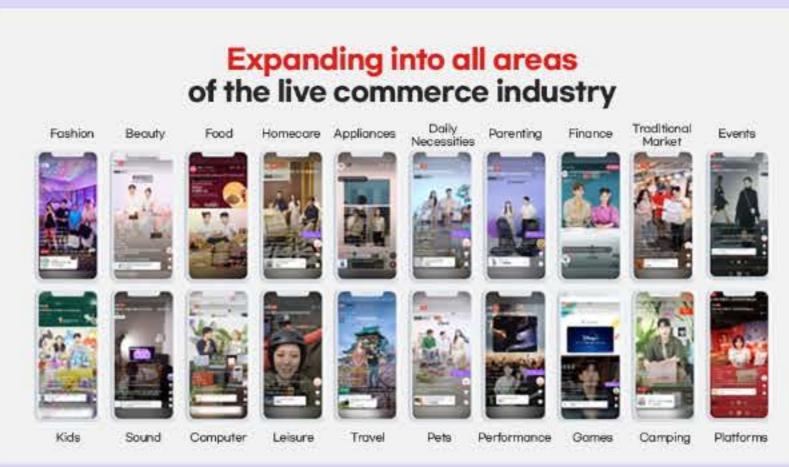
The growth of live commerce is being driven by China, the world's largest consumer market with nearly 1.5 billion people, where the live commerce market already exceeds 600 trillion won. It is predicted to account for up to 20% of the e-commerce market, and South Korea is expected to grow to about 30 trillion won by 2025, and about 800 trillion won by 2025, including the United States and six ASEAN countries.

We can see that live communication is entering our lives in various spaces (social media, APP, Web, etc.) not only in commerce, but also in the entire life cycle from cradle to grave, including childcare, education, finance, and health. It is no exaggeration to say that we are transitioning from the era of Untact to the era of Livetact. In this transition, Al technology is creating a revolutionary transition.

Breaking down communication and market boundaries.

Livetact, which refers to live streaming content, live commerce broadcasts, and social media live broadcasts, was initially developed in the form of personal broadcasts, but now customer demand is rapidly increasing centered on live commerce.

If the conversion rate of top products on e-commerce platforms is usually around 1%, the conversion rate of live commerce products is recently approaching 3-5%. When influencers with fan sentiment are involved, it is not uncommon to see an average of 5-10%, and it is expanding not only to the MZ generation but also to the active senior generation.

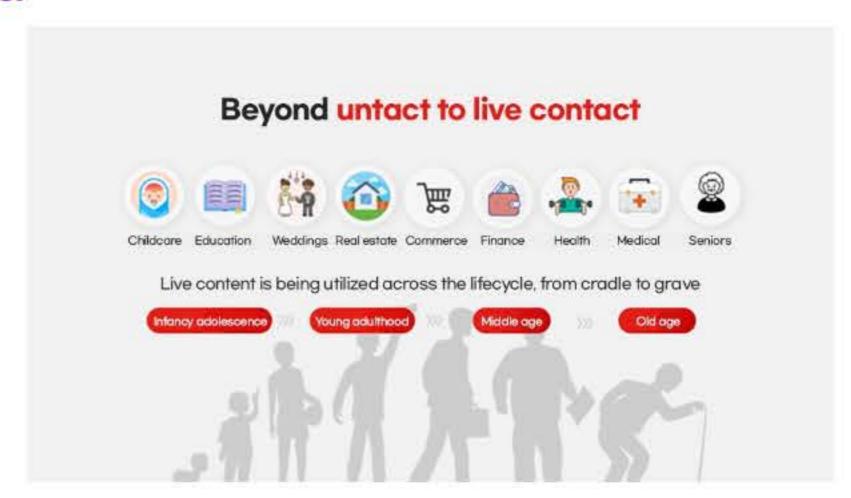


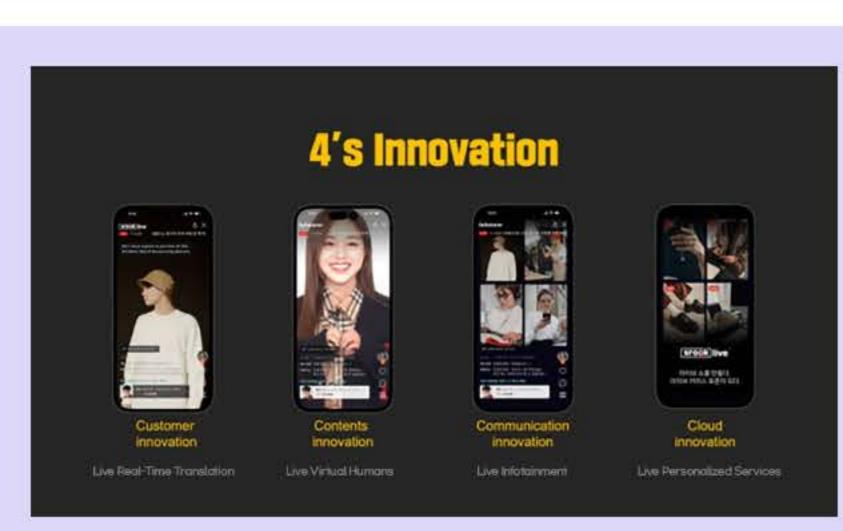
Broadcasting concepts, customer coverage, and customer demand are increasing, and competition is intensifying with market expansion. Customers are now demanding more realistic and sensational content, including high video quality, diverse and unique cast, and content organization. In Korea, about 2 million brands have brand platforms in the form of apps or web, and the desire to break away from large platforms and communicate directly with customers is surging. However, despite the increasing demand, they are facing overhead issues from broadcast production to operation, and are facing the challenge of efficiently utilizing highly volatile content.

Al-powered live tech will revolutionize the way we communicate with our customers, transforming the constraints of time and space, language, and the monolithic way of interacting with customers, enabling a new era of Livetact.

What is the second generation of Al-based Livetact technology?

Until now, the Livetact environment has been limited to one-dimensional information transmission and expression methods such as language limitations, uniform expression methods centered on broadcast content, and text-centered communication, centered on streaming and broadcasting technologies. The second generation is creating a new paradigm centered on real-time multilingual interpretation services, virtual humans, etc. by utilizing advanced technologies of AI and AR.

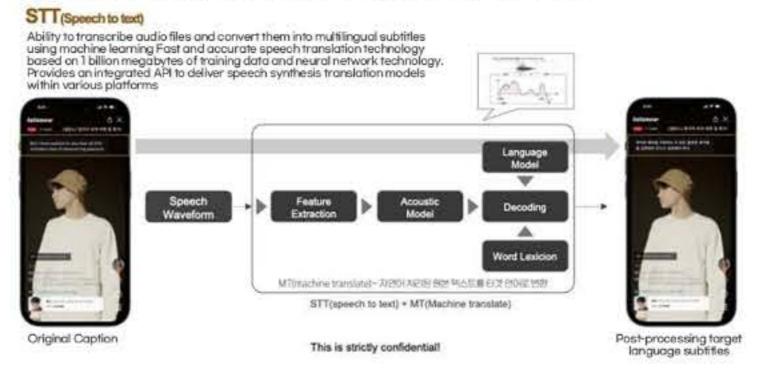




The first was the introduction of speech to text (STT) technology, which converts a broadcaster's voice file into text and then converts it into multilingual subtitles using artificial intelligence and machine learning technology, and voice synthesis (VS) technology, which separates the voice, processes the file into natural language, changes it to the language of the target country, and synthesizes the file with the original.

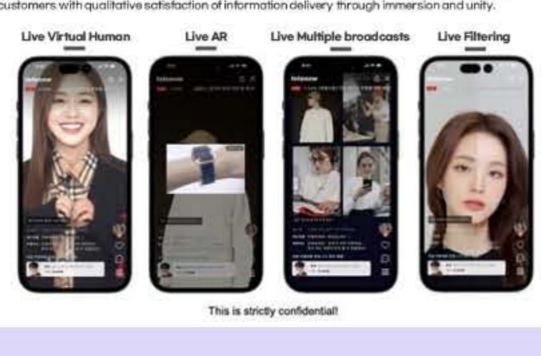
Second, digital entertainment technology is the foundation for live broadcasting, which is not limited by time and space. It reduces the cost of hair, makeup, etc. for broadcast performers and enables infinite modification with graphics technology, so live broadcasting is possible in any environment or condition. Live AR provided by motion tracking technology can provide an innovative environment for information delivery, such as exposing products and information and maximizing immersion.

Exclusive technology for live solutions for global simulcasting without language barriers



Live entertainment based on virtual human, AR, and digital entertainment technologies

Based on graphic technologies such as virtual influencers. AR, and video filters, it provides an environment where time and space-limited businesses can express various contents in any environment and conditions, and provides customers with qualitative satisfaction of information delivery through immersion and unity.



Third, filtering solutions for video and audio provide diversity of expression, and the introduction of multibroadcasting, Al-based live chatbots, and eye-tracking technology provide innovative technologies for ultra-personalized customer relationships. All of these technologies are being jointly developed by global No. 1 companies in their respective fields, such as Alibaba Cloud and Byte Dance, and offered as a solution called Live SaaS, or LaaS, with compatibility, scalability, convenience, and reliability, heralding a new era of Livetact.

What does Livetact Gen 2 mean for us?

With Livetact Gen 2, merchants can sell to global audiences in the US, Japan, China, Southeast Asia, and beyond in a single broadcast, with no language barriers. YouTubers can broadcast simultaneously on YouTube and on commerce platforms.

People who want to communicate with live content can innovate and reduce costs by using virtual studios, virtual humans, and more, without the expense of broadcast equipment, cast members, and more. As live content pushes the boundaries of expression and unleashes creativity beyond imagination, new stars and fans will emerge – live creators and live influencers. A new cultural and commercial paradigm will be created for communicating and transacting in the live space – BTS will be able to simultaneously communicate with their global audience on the official BTS app or web in their own language.

Brands will communicate and sell directly to customers on their own platforms, and there is a shift towards utilizing large e-commerce platforms for their purposes. A new trend will emerge in which the keywords of value for money and satisfaction for the price will be expanded, centered on active consumers who want to consume taste, free from the pressures of distribution scale and unreasonable transactional relationships.

Global live solutions that combine the best of AI, Cloud, and Content C-) Alibaba Cloud Branch time automatic translation Wideo togging Seller matching solutions Wisual Entertainment

ideo analytics

ontent Production



For mobile shopping, you can try on hats or arrange furniture in your home with your smartphone camera. Merchants can meet, sell, and interact with domestic and international customers live. Customers can get explanations in Korean instead of English and ask personal questions directly to the chatbot.

Through A.I-based live-tech technology, the perception that the world is one live communication will spread.

Industry Trends

Revolutionizing Online Shopping, Live Commerce Market Trends

Live commerce is a combination of live streaming and e-commerce, and refers to online channels that sell products via live video streaming. Consumers are able to communicate securely online and interact with each other while watching the live broadcast. It's not just about shopping, it's about content, fun, and a new way of shopping online.

#Live Commerce

#E-Commerce

#Live Streaming

#Short Clip

#new way of shopping



Currently, NAVER is the number one live commerce company in Korea. According to statistics released by the Seoul Metropolitan Government in April last year, 6 out of 10 consumers have used live commerce, with 84.1% of them using Naver Shopping Live, 54.6% using Kakao Shopping Live, and 47.6% using Coupang Live. According to NAVER, in the three years since its launch through the end of June, the cumulative transaction value of Shopping Live was about 1.4 trillion won and the cumulative number of views was about 3 billion. NAVER expanded its live commerce business by introducing "Short Clip," a short form video of about two minutes in length, and as a result, the number of merchants participating in Short Clip increased by 46% in the second quarter compared to the first quarter, and the transaction value increased by 68%. In June, we launched the Al Cue Sheet Helper service, which drafts Shopping Live cue sheets based on product characteristics. This makes it easier for sellers to prepare and go live, as they can draft a script for their products in less than a minute.



Source:YouTube Live

YouTube Live is a live streaming feature that allows businesses and content creators to stream videos in real time to their followers. YouTube launched its live commerce business with a shopping tab at the end of last year, and officially opened the Korean version of the shopping channel in June this year. This allows YouTube to take the lead in selecting creators and organizing broadcasts that would have been decided by traditional retailers or manufacturers, but it does not yet have its own sales channel. Video creators and companies conduct live broadcasts on individual YouTube channels, and actual purchases are made on individual ecommerce or company malls through links.

Amazon Live allows online marketplace vendors to build a following by live streaming directly to their customers or broadcasting in bulk. During the live stream, the digital streaming platform attracts followers and even boosts viewership as they increase their following through notifications in their shopping apps. It also makes it easy to access your broadcasts, with features specifically designed to encourage them to come back if you go off the air for a while. Amazon Live has the best features for streaming your business' content because users are already logged in with their credit card and address attached to their profile, so all you have to do is convince them to click "Buy Now".



Source:Amazon live

The growth of the live commerce market

As the market continues to grow, various efforts are underway to prevent consumer harm and establish a healthy trading order. The KFTC reviewed the seller terms and conditions of four platform operators providing live commerce services - Coupang, Naver, Kakao, and Grip Company - and corrected unfair terms. In the event of a defect in the delivery process or an online information leakage incident, the existing clause, which required the seller to bear all liability regardless of whether the seller was at fault, was revised to require the seller to be liable for damages that are causally related to the seller's responsibility. In addition, the provision that allowed the platform to unilaterally terminate the contract based on ambiguous reasons has been amended so that it can only be terminated in the event of a default. In addition, the provisions that required the platform operator to follow the decision in the event of a dispute have been corrected, and a healthier market is expected to be created. One of the features of live commerce is that anyone can easily become a seller through the platform. Not only giant companies such as Naver and Kakao, but also small businesses are expanding their sales through live commerce. The Small and Medium Business Distribution Center has been running influencer training for small businesses since 2020 and supporting practical courses linked to live commerce, and local governments are also carrying out various projects for small businesses. Live commerce is also being used to revitalize the local economy by providing subsidies for live commerce sales, connecting show hosts for hosting, and supporting broadcasting equipment for filming.

Shopping and Al combine to blur the lines of communication

Live commerce not only puts your face in front of your customers, but it also takes place in realistic locations, such as offices, and is not limited by time or space. Unlike traditional shopping, it is spreading as a new form of consumption because it offers customized products in a natural way and uses artificial intelligence such as chatbots to receive feedback on shopping as well as high-level features such as live chat and heart press. In addition, whereas in simple online shopping, consumers had to look for blogs, reviews, etc. to resolve their questions, in live commerce, they can ask questions in real time and have unfiltered conversations. Companies are actively using AI to improve the shopping experience. Unlike traditional shopping, AI extracts and summarizes key information, such as product features and customer reviews, to naturally provide personalized recommendations. As new shopping platform technologies develop, it is expected that companies will maximize their service competitiveness through generative AI to prepare for changes such as user interfaces and break boundaries by actively communicating with customers to lead to search, shopping, payment, and repurchase.

Reference

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 ho} \,$
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Creating AI that communicates with human beings



типів

CATCHSECU

MACHBASE
Value Data Driven Intelligence

EBS

TUNIB Co., Ltd.

P Core Technologies and Achievement Highlights

- Persona chatbot service and API based on the large language model AI

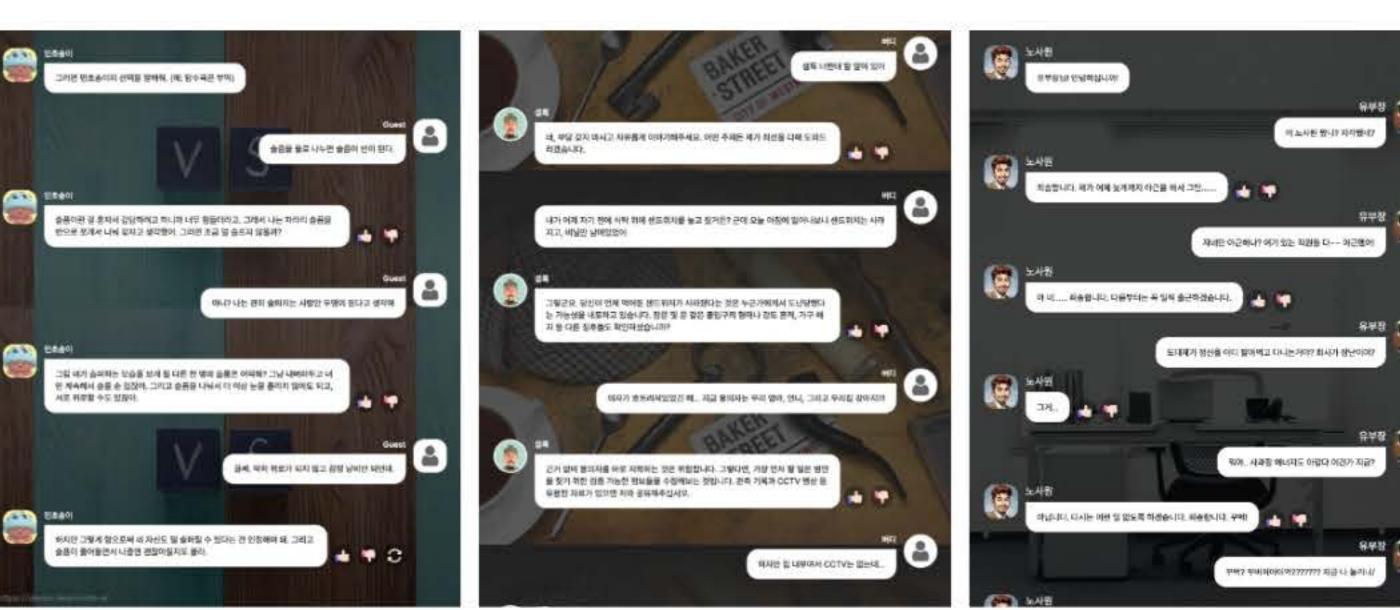
A world where people and Al can communicate freely



DearMate pet dog chatbot

Nowadays, the natural language processing (NLP) market is rapidly growing in the field of artificial intelligence (Al). NLP is one of the main fields of Al that studies the interaction between computers and human language. This technology is widely used for Al speakers and chatbots. In particular, many big techs released large language models that can transfer information and assist work with the introduction of ChatGPT. In addition, a lot of attempts are made to develop chatbot technology that can empathize with users' emotions, give advice, and have conversations, in addition to the realm of reason. It was forecast in 2022 that the Al chatbot market will grow to \$ 9.4 billion (approximately KRW 10.6 trillion) in 2024, but estimated amounts that greatly exceed this figure are emerging. As a startup specializing in natural language processing, TUNiB Co., Ltd. was established mainly by Kakao Brain NLP team members in 2021. TUNiB holds the technology for chatbots based on generative Al using its own large language model and natural language processing technology that drives the Ah based chatbot. As it also has its own technological prowess and technology of utilizing external language models, TUNiB has released about 50 different types of persona chatbots and NLP APIs since its establishment, such as dog chatbots and English; speaking cloud chatbots. With the investment invited from Pearl Abyss, DSC and Naver in November 2021, TUNiB 's potential was recognized. In July 2022, TUNiB signed an agreement with the Seoul Metropolitan City to provide various work experiences to young job seekers, demonstrating that startups can also secure corporate competitiveness while contributing to society.

Laying the foundation for domestic open data



Sampled actual conversations on DearMate

It is important to secure quality data for Al learning to train high-performance Al models. That is, securing Al training data is the core task of the data dam building project and an important task of the Digital New Deal policy. However, domestic Al companies have relied heavily on overseas open data, which made it difficult to utilize such data for domestic service development due to the uniqueness of the Korean language and the relatively small number of language users. TUNiB applied for the ICT Funding Project to contribute to laying the groundwork for domestic open data using its technology, based on the judgment that service development requires researchers with expertise in natural language including Korean parts of speech and professional data collection and processing methodologies. The detailed tasks of the '2022 data building for the Al learning project' applied for by TUNiB were 'Korean BlenderBot data' and 'Korean common sense sentence data.' In the case of the former, the purpose of the task was to increase the level of open-domain conversation by improving the Korean version of the BlenderBot (cutting-edge global chatbot) dataset with higher quality than the original. In the case of the latter, the purpose was to secure and build Korean common sense sentence data in order to make it available for training the generative model. While implementing those two tasks, TUNiB performed modeling for data building, and the modeling was used to prove the validity of the dataset. The tasks were successful as the modeling target performance was exceeded. The tasks recorded competitive performance compared to the papers used as references. The achievements were quite meaningful as TUNiB could additionally learn from the conversation dataset published on Al Hub while considering the actual service since TUNiB provided the conversation chatbot service, and TUNiB demonstrated the possibility of advancement when performances were compared. TUNiB also provided baseline modeling codes that can directly help organiz

Difficulties of the past turned into knowhow of the present

Although all targets were overachieved, the project was delayed due to restrictions on face-to-face meetings owing to the spread of COVID-19 and COVID-19 infection by the persons in charge of practical business. Therefore, TUNiB had to implement the project while devising an efficient way to proceed. All the challenges felt like difficulty at the time, but it became know-how that is quite useful when implementing multiple projects now. It seems the dataset will be utilized in various ways as it is now. However, good-quality data is still lacking when developing good Al engines. In particular, papers are a collection of logical and refined expressions, but paper data in Korea is distributed among affiliated organizations of the specialized institutions compared to English-speaking countries. Therefore, it is not easy to accumulate even open data. To develop an Al engine that can be utilized in more diverse fields, the dataset needs to be built for each field, which will be a great steppingstone for future growth.

PICT Funding Project

Dedicated Institution
 Business Objective
 Business Description
 Data building for Al learning
 Data building for Al learning

P Company information

* CEO

Type of Business Software development and supply
 Year of Establishment 2021. 03
 Website www.tunib.ai

Park Gyubyeong





TUNIB

CATCHSECU

MACHBASE Value Data Driven Intelligence

EBS

O.NE PEOPLE Co., Ltd.

P Core Technologies and Achievement Highlights

- CatchSecu won the grand prize in the Personal Information Technology Startup Challenge hosted by the Personal Information Protection Commission

A future society in which privacy protection has more importance!



With the 4th Industrial Revolution in full stride, there is a paradigm shift to the data economy. Accordingly, the personal information protection market is also growing rapidly, but the supply of experts has not kept up the pace. In fact, according to the personal information protection fact-finding survey announced by the Personal Information Protection Commission in 2021, 98.5% of private companies do not have a dedicated personal information protection manager. However, 72% of the personal information protection managers assigned by mandate at public institutions are lacking in expertise with less than 3 years of experience.O.NE PEOPLE Co., Ltd. is a company that operates CatchSecu, a B2B service that automatically manages customers' personal information held by the company from collection to final disposal. We successfully carried out the commercialization of the CatchSecu service in the ICT Funding Project. Staying abreast of the recent issue of personal information protection, we have used both Al and cloud technology to innovate the shortfall of experts and support them to solve problems in the personal information protection market with high efficiency and low cost.

Tricky personal information collection and management! All hassle-free with CatchSecu!

The core technology of CatchSecu is to analyze the type and purpose of personal information using artificial intelligence algorithms and to automatically set consent forms and regulatory requirements necessary for collecting personal information from customers. This helps marketers and operators to legally collect and manage personal information in compliance with relevant regulations, even if there is no personal information protection expert employed by a company. Companies can use CatchSecu with confidence because it boasts a personal information algorithm with 99.8% accuracy and completed a legal review on its regulatory automation algorithm. In addition, when the personal information processing status is entered into CatchSecu, the artificial intelligence algorithm analyzes the type and purpose of personal information and automatically creates the necessary consent form, allowing ease of use. A form template (Catch form) to collect personal information can be created with the consent form produced like this, and it can be shared with a URL or QR code, making it easier to collect personal information.

Continuing a unique move in the personal information protection industry market



According to the Korea Information Security Association, the information security industry market is recording a double-digit growth rate every year. Sales of the domestic information security industry in 2021 increased by 13.4% year on year to KRW 13,861.1 billion, while overseas sales increased by 8.5% year on-year to KRW 1.913 trillion in 2020. Even in the information security industry market, with its rapid growth in full swing, O.NE PEOPLE is pioneering the market. Since its establishment in 2018, O.NE PEOPLE has shown remarkable growth, such as selecting the TIPS program and attracting seed investments. In particular, in 2022, CatchSecu was introduced and garnered keen attention from industry insiders. At the time of ICT Funding Project support, CatchSecu was reaching the final phase of its development. The accelerating program of the support project has helped CatchSecu grow the business and attract investment. But there were also difficulties. After the initial investment, there was uncertainty for us to prepare an IR for selection in a support project in a few years. From the order in which an IR pitch deck should be prepared to the calculation of corporate value, the areas to be worried about and dealt with seemed insurmountable to handle. Fortunately, as the IR education and mentoring provided by the program progressed, preparations for investment attraction were completed one at a time. Among them, the most memorable aspect was the networking venue with senior security companies. The meeting that seemed to take place by chance turned into an opportunity and provided a foundation for growth.

Support projects that underpin remarkable growth

After participating in the support project, O.NE PEOPLE has earned high praise for its technological prowess, and is positioning itself as a valuable service in the market. Last year, we mainly handled many small businesses, but this year, starting with the Korea Internet & Security Agency, we succeeded in pioneering markets for public institutions such as the Seoul Economic Promotion Agency, the Junggu Cultural Foundation, and the Korea Aerospace Research Institute. We participated in the country's leading competitions and programs, winning numerous awards. In 2023, the Ministry of Science and ICT selected CatchSecu as an excellent information protection technology service, and in 2022, our product won the grand prize in the Personal Information Protection Utilization Technology Development Challenge of the Personal Information Protection Committee. We also participated in the 2022 K-Startup information security growth company leap program hosted by the Ministry of Science and ICT. In the IR pitching contest held under the program, we won the Minister of Science and Technology Information and Communication Award, and successfully attracted Series A investment from Piolink, followed by a string of good news. Moreover, from the time of the support project, the number of paying customers of CatchSecu has more than tripled, and recently, our product was concurrently selected for the 2023 K-Startup Information Security Growth Company Leap Program and the K-Security Startup Global Challenge for two consecutive years. O.NE PEOPLE has achieved rapid growth in a short period of time with customized services for personal information protection. We strive to usher in a world where personal information protection is a basic undeniable right.

PICT Funding Project Dedicated Institution

 Business Objective Information Protection Cluster Business Description Training of information security professionals

Korea Internet & Security Agency

Company information

CEO Cho Ayoung Type of Business Development and supply of industry system soft-up

 Year of Establishment 2018.03

 Website www.catchsecu.com

TIME LINE



service)' by the Ministry of Science and ICT

Towering above the rest as the world's best time-series DBMS



TUNĬB

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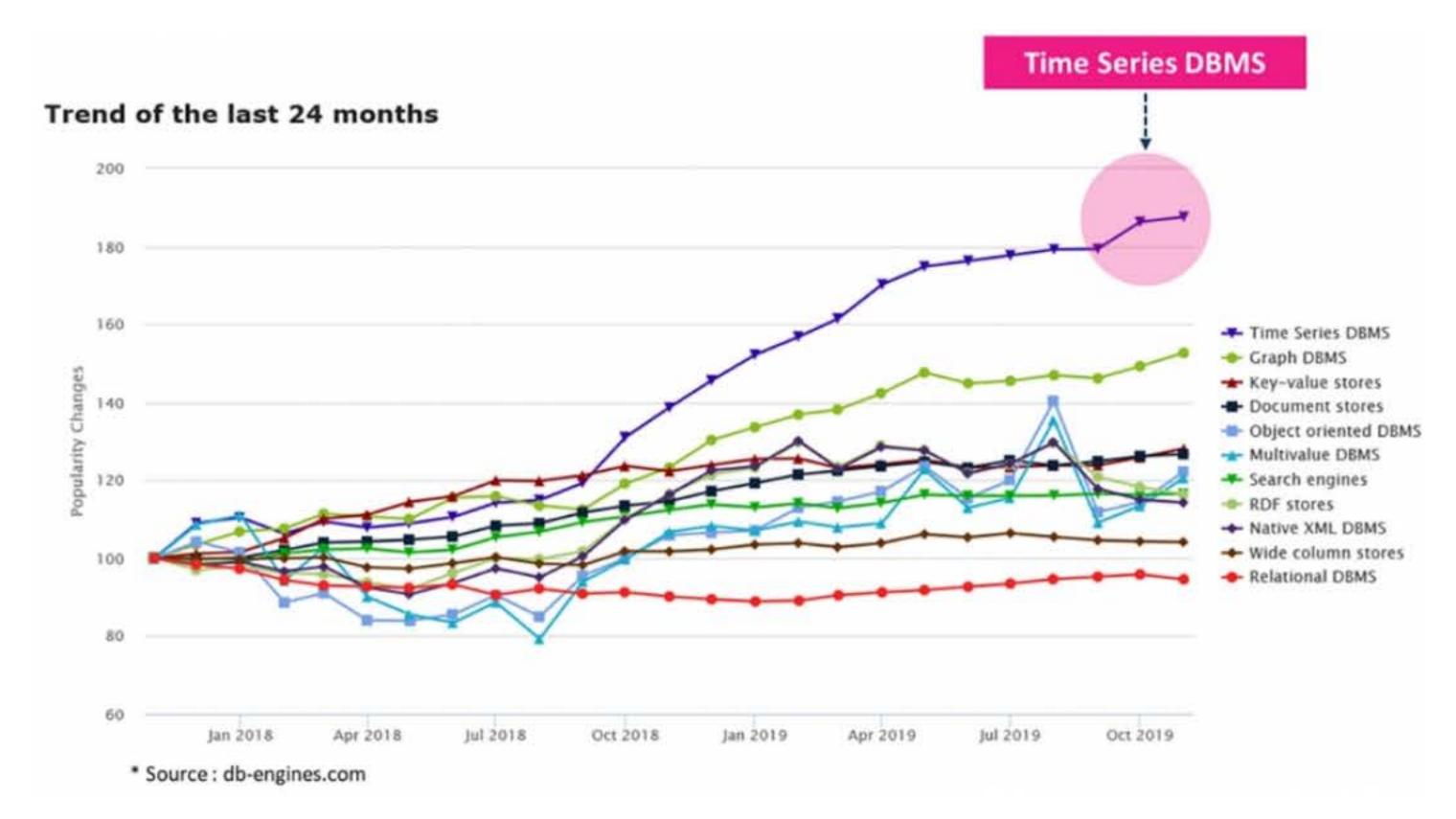
EBS

Machbase Co., Ltd.

P Core Technologies and Achievement Highlights

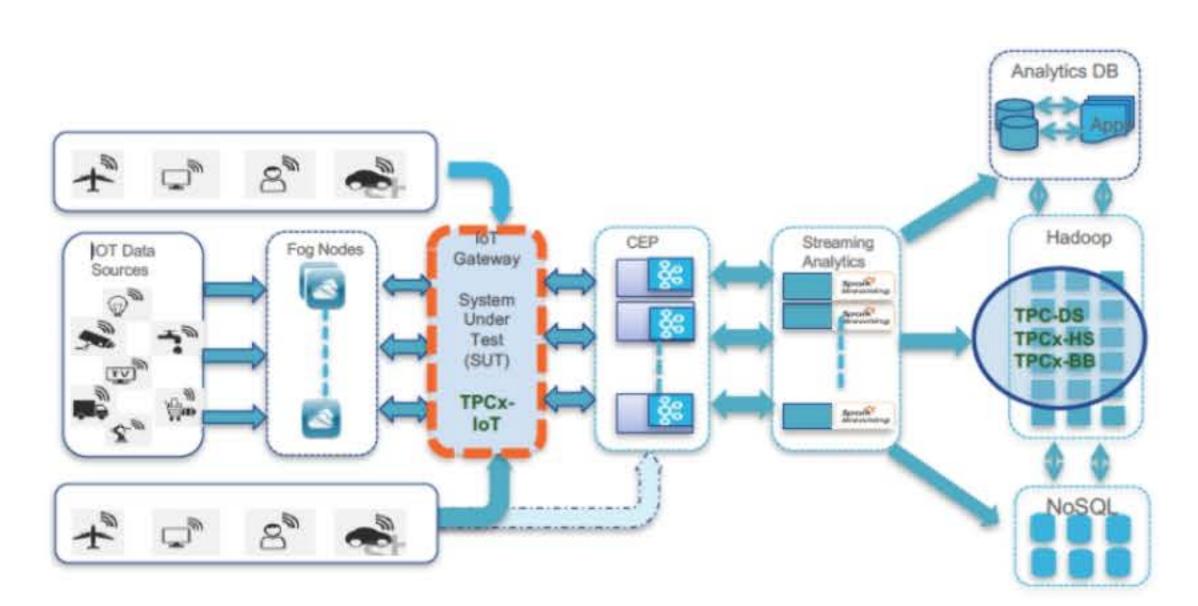
- Boasts the world's highest performance time-series DBMS commercial software (World's No. 1 performance evaluation in the TPCx-IoT field)

Time-series database in the spotlight in the IoT era.



What methods can be used to efficiently process exponentially accumulating data in a short period of time? Most experts point out a time-series database (TSDB). Time-series data refers to data stored every second, every minute, or every hour, and so sensor data has the characteristics of time-series data, given that sensed values are stored according to the passage of time. For processing such time-series data through an existing relational database, it is inevitable that data processing performance deteriorates as the amount of data increases over time. A time-series database was developed to solve this problem. In the field of time-series database, which company has developed the world's most powerful time-series database? The world's leading software companies will come to mind first, but in fact, it is a Korean company known as Machbase Co., Ltd.

Machbase, a company with the world's best technology



Machbase boasts the best technology in the field of time-series DBMS (DBMS: Database Management System). According to performance evaluations conducted by the international performance evaluation organization TPC (Transaction Processing Performance Council), our original technology has developed the time-series data DBMS (product name Machbase) that surpasses the world's leading companies with overwhelming data processing speed and has been top-ranked in the world for five consecutive years in the field of 'TPCx-loT'. Until May 2022, it maintained the highest DBMS performance to hold the top rank for three consecutive years after beating out the U.S. open-source DBMS product 'Hadoop' to rank first in the loT field for the first time according to the TPC performance evaluation in 2019. However, in May 2022, it was overtaken by China's Alibaba, which received a performance evaluation with a processing speed of 4.8 million per second.

Retaking the No. 1 rank with ICT Funding Project

Through the ICT Funding Project, Machbase has undergone the procedure to receive an internationally recognized performance evaluation once again. The internationally recognized performance evaluation called TPCx-loT requires a difficult procedure to conduct the test. The review process for confirming the test results also requires a high cost, requiring the hardware and environment needed for the test to be built with the participation of TPC member companies. In the 2022 performance evaluation, the support of the Korea Telecommunications Technology Association (TTA), a member of TPC, and the fund project were instrumental in this. For sure, the process leading up to the performance evaluation was not an easy one. In improving the test scores, since it is necessary to measure performance after obtaining a large volume of data in a high-1 performance hardware environment, which was unavailable to secure in South Korea, the hardware was carried out in conjunction with major companies, such as Intel and AMD.Our commitment and diligent efforts have reaped rewards. On December 18, 2022, Machbase proudly regained its top rank with a processing power of 5.7 million per second through 'Machbase 7.0.6 version'. This performance is a 69% improvement in processing power over our March 2021 record of 3.4 million, and represents a 20% improvement above Alibaba's record.

Hardware that stands tall as the world's No. 1 company

Machbase provides an opportunity to take a step forward based on the achievement of being the world's No. 1 record in processing power for five consecutive years. Although the time-series database developed by Machbase boasts world₁ class performance, the product's strengths have been overlooked in an objective evaluation on account of low domestic and international market awareness and a lack of certified results of product performance. However, through these tests, we were able to publicize our technological prowess and dispel any doubts about product performance among customers. Moreover, we have been able to successfully spotlight our proprietary time-series DBMS and solutions in the public sector, such as public facilities, railway operators, and electric/ power utility. Based on this result, Machbase plans to forge ahead with the challenge of global marketing and sales promotion. We look forward to Machbase's catapult to reach the world's No. 1 record in sales, not only processing power, with its strong prospect as a domestic company boasting the world's best DB processing technology.

PICT Funding Project

Dedicated Institution
 Institute for Information & communication Technology Planning & evaluation

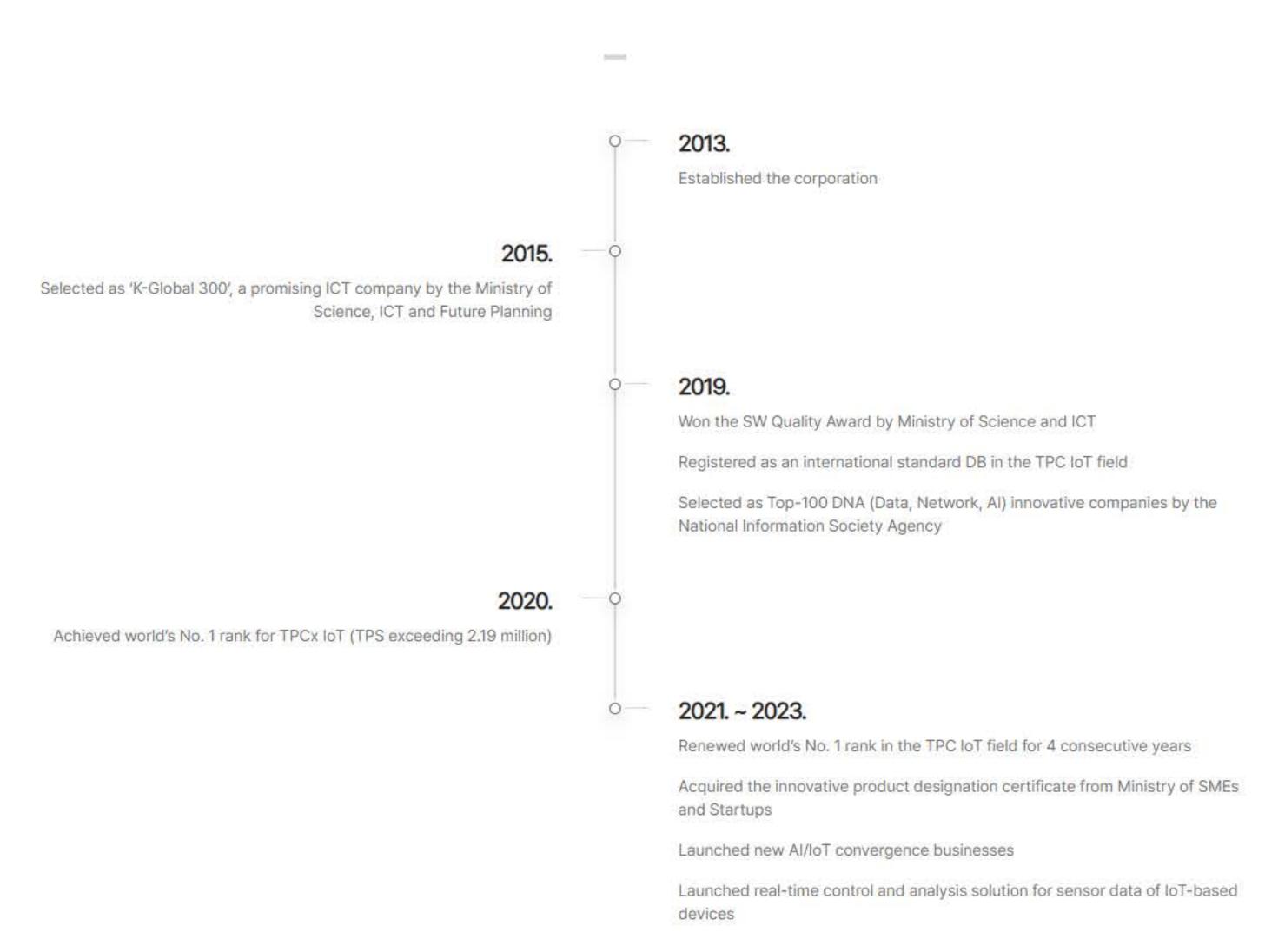
Business Objective Global ICT Innovation Cluster Creation
 Business Description HPC Innovation Hub

P Company information

Website

CEO Kim Seongjin
 Type of Business Development and supply of software
 Year of Establishment 2013.

https://kr.machbase.com/





TUNÏB

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EBS

Korea Educational Broadcasting System

P Core Technologies and Achievement Highlights

- Introducing a production model that incorporates cutting-edge video technologies such as in-camera VFX and virtual humans, which can be effectively utilized in broadcasting content creation

Produced, Korea's first extended reality (XR) talk show.

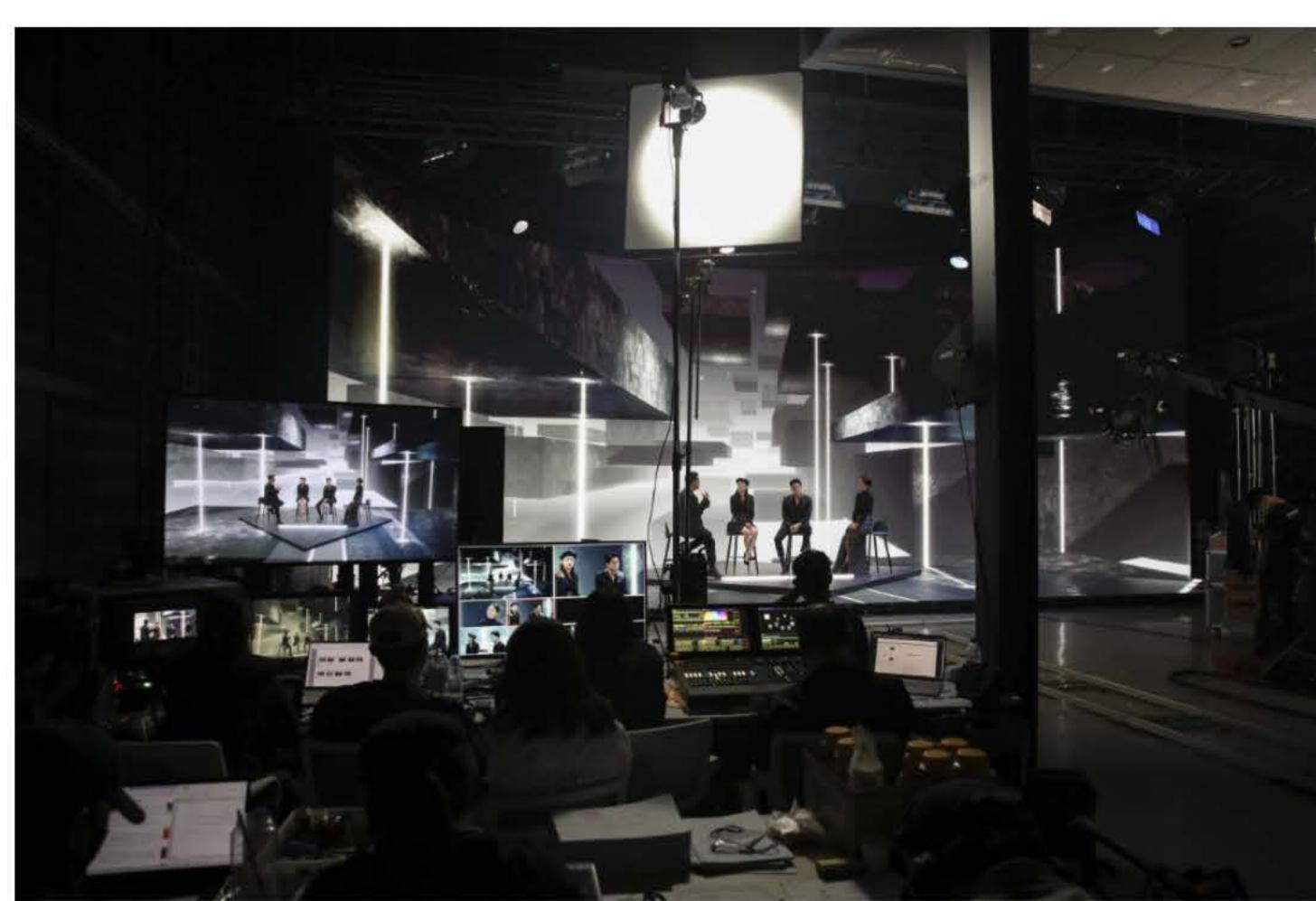


Photo of filming o

VFX refers to visual special effects. Here, FX is an abbreviation for effects. VFX is a general term for technology that creates nonexistent visual effects by using computer graphics or analog techniques in video. Special effects (SFX) were used in video production to show things that do not exist in reality before computer graphics (CG) technology became available. Initially, CG technology was used as a means of assistance to SFX. The application of CG technology was extended to the filming areagoing beyond the existing SFX area such as digital color correction enhance the visual effect of video. VFX is a new term used to refer to this. VFX work includes lighting, composing, and animation, in addition to digital characters. The Oscars in the US have VFX (best visual effects) in the technology category, along with editing, makeup, costumes, and art. Just like VFX in recent movies, demand for special visual effects is rapidly increasing in broadcasting. In addition, VFX is expanding its application and business area to the metaverse such as virtual production and virtual human, beyond simple special effects support. Foreign broadcasting companies are often more proactive in adopting visual technology compared to the Korean broadcasting industry. While the Korea Educational Broadcasting System (EBS) has experimented with applying visual technology internally, there has been a tendency to overemphasize its strengths by fully embracing the technology. Meanwhile, EBS successfully produced "The Dreamers," the first extended reality (XR) talk show in Korea, thanks to the support received from the "Laying the foundation for next-generation broadcasting growth project" managed by the Ministry of Science and ICT, specifically in the field of "new tech convergence content." EBS has been actively pushing the boundaries of video broadcasting technology by incorporating new technologies such as in-camera LED technology and virtual humans in content production. These advancements have introduced novel elements that were previ

The attention-grabbing VFX (In-Camera VFX) and virtual human visuals that captivated the viewers.



Photo of virtual humans in

"The Dreamers" (directed by Lee Misol and Jeong Jaeyong) is a TV series that narrates the gripping tale of a shocking crime set in a highly technologically advanced future world and how it is ultimately solved. Viewers are actively engaged in discussions about the storyline. The mesmerizing stage, which dynamically transforms in sync with the narrative using cutting edge XR (eXtended Reality) technology, provides a synesthetic experience, immersing viewers into a fantastical future world. Notably, the utilization of virtual humans, created through a combination of deepfake technology and full CG interlinked with motion capture, has captured viewers' attention with their dynamic gestures and lifelike expressions. The production team completed a talk show using in camera VFX throughout the airtime for the first time in Korea. In-camera VFX technology synthesizes and visualizes a background created by CG with images currently filmed in real time and also called virtual production. In each episode, future criminals or victims were brought to life using virtual humans, employing three different implementation methods: full CG virtual humans linked with real-time motion capture, deepfake, and volumetrics. These cutting-edge technologies, which are not commonly utilized in broadcasting, were made possible through the support of the ICT Funding Project. Certainly, there were challenges in producing the program due to the application of a completely new visual effect technology. Particularly for "The Dreamers," the difficulty lay in ensuring a seamless flow during filming, as the show primarily consisted of a talk show format despite incorporating extensive technology. The use of in-camera VFX technology with LED, which was not yet fully commercialized, posed additional risks during filming. To address these challenges, the production team relied on frequent rehearsals to maintain the talk show flow during actual episode filming. They dedicated over 10 days to rehearsal, meticulously coordinating lighting, LED backgroun

Planning to increase the use of new broadcasting technology

The Dreamers won the excellence award at the presentation event for the Results of laying the foundation for next-generation growth in 2022 and the best picture award in the talk show category at the Houston International Film Festival in 2023 in recognition of the various technical experiments and perfection. In particular, The Dreamers was selected as a finalist in the Best use of Technology category at the New York TV & Film Festival.EBS expects the new technologies to be used more commonly in broadcasting thanks to The Dreamers produced this time. EBS internally continues to test new technologies for commercialization of XR Studio and prepares for application to various contents. The use of the game engine (Unreal), which is the characteristic of XR work, will also be increased, because the game enginewhich was not frequently used for conventional broadcasting productionenables graphics never before seen.

▶ ICT Funding Project ■ Dedicated Institution

Business Objective Promoting broadcasting contents
 Business Description Laying the foundation for next-general

Kim Youyeol

Business Description
 Laying the foundation for next-generation broadcasting growth

Korea Radio Promotion Association

Company information ■ CEO

Type of Business Broadcasting company
 Year of Establishment 2012. 5.
 Website www.ebs.co.kr

TIME LINE



2021. 3.

Supported interactive learning such as interactive video classes

Educational Broadcasting System Act

Revolutionizing Online Shopping, Live Commerce Market Trends

Live commerce is a combination of live streaming and e-commerce, and refers to online channels that sell products via live video streaming. Consumers are able to communicate securely online and interact with each other while watching the live broadcast. It's not just about shopping, it's about content, fun, and a new way of shopping online.

#Live Commerce

#E-Commerce

#Live Streaming

#Short Clip

#new way of shopping



Currently, NAVER is the number one live commerce company in Korea. According to statistics released by the Seoul Metropolitan Government in April last year, 6 out of 10 consumers have used live commerce, with 84.1% of them using Naver Shopping Live, 54.6% using Kakao Shopping Live, and 47.6% using Coupang Live. According to NAVER, in the three years since its launch through the end of June, the cumulative transaction value of Shopping Live was about 1.4 trillion won and the cumulative number of views was about 3 billion. NAVER expanded its live commerce business by introducing "Short Clip," a short form video of about two minutes in length, and as a result, the number of merchants participating in Short Clip increased by 46% in the second quarter compared to the first quarter, and the transaction value increased by 68%. In June, we launched the Al Cue Sheet Helper service, which drafts Shopping Live cue sheets based on product characteristics. This makes it easier for sellers to prepare and go live, as they can draft a script for their products in less than a minute.



Source:YouTube Live

YouTube Live is a live streaming feature that allows businesses and content creators to stream videos in real time to their followers. YouTube launched its live commerce business with a shopping tab at the end of last year, and officially opened the Korean version of the shopping channel in June this year. This allows YouTube to take the lead in selecting creators and organizing broadcasts that would have been decided by traditional retailers or manufacturers, but it does not yet have its own sales channel. Video creators and companies conduct live broadcasts on individual YouTube channels, and actual purchases are made on individual e-commerce or company malls through links.

Amazon Live allows online marketplace vendors to build a following by live streaming directly to their customers or broadcasting in bulk. During the live stream, the digital streaming platform attracts followers and even boosts viewership as they increase their following through notifications in their shopping apps. It also makes it easy to access your broadcasts, with features specifically designed to encourage them to come back if you go off the air for a while. Amazon Live has the best features for streaming your business' content because users are already logged in with their credit card and address attached to their profile, so all you have to do is convince them to click "Buy Now".



Source:Amazon live

The growth of the live commerce market

As the market continues to grow, various efforts are underway to prevent consumer harm and establish a healthy trading order. The KFTC reviewed the seller terms and conditions of four platform operators providing live commerce services - Coupang, Naver, Kakao, and Grip Company - and corrected unfair terms. In the event of a defect in the delivery process or an online information leakage incident, the existing clause, which required the seller to bear all liability regardless of whether the seller was at fault, was revised to require the seller to be liable for damages that are causally related to the seller's responsibility. In addition, the provision that allowed the platform to unilaterally terminate the contract based on ambiguous reasons has been amended so that it can only be terminated in the event of a default. In addition, the provisions that required the platform operator to follow the decision in the event of a dispute have been corrected, and a healthier market is expected to be created. One of the features of live commerce is that anyone can easily become a seller through the platform. Not only giant companies such as Naver and Kakao, but also small businesses are expanding their sales through live commerce. The Small and Medium Business Distribution Center has been running influencer training for small businesses since 2020 and supporting practical courses linked to live commerce, and local governments are also carrying out various projects for small businesses. Live commerce is also being used to revitalize the local economy by providing subsidies for live commerce sales, connecting show hosts for hosting, and supporting broadcasting equipment for filming.

Shopping and Al combine to blur the lines of communication

Live commerce not only puts your face in front of your customers, but it also takes place in realistic locations, such as offices, and is not limited by time or space. Unlike traditional shopping, it is spreading as a new form of consumption because it offers customized products in a natural way and uses artificial intelligence such as chatbots to receive feedback on shopping as well as high-level features such as live chat and heart press. In addition, whereas in simple online shopping, consumers had to look for blogs, reviews, etc. to resolve their questions, in live commerce, they can ask questions in real time and have unfiltered conversations. Companies are actively using AI to improve the shopping experience. Unlike traditional shopping, AI extracts and summarizes key information, such as product features and customer reviews, to naturally provide personalized recommendations. As new shopping platform technologies develop, it is expected that companies will maximize their service competitiveness through generative AI to prepare for changes such as user interfaces and break boundaries by actively communicating with customers to lead to search, shopping, payment, and repurchase.

Reference

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Creating AI that communicates with human beings



типів

CATCHSECU

MACHBASE
Value Data Driven Intelligence

EBS

TUNIB Co., Ltd.

P Core Technologies and Achievement Highlights

- Persona chatbot service and API based on the large language model AI

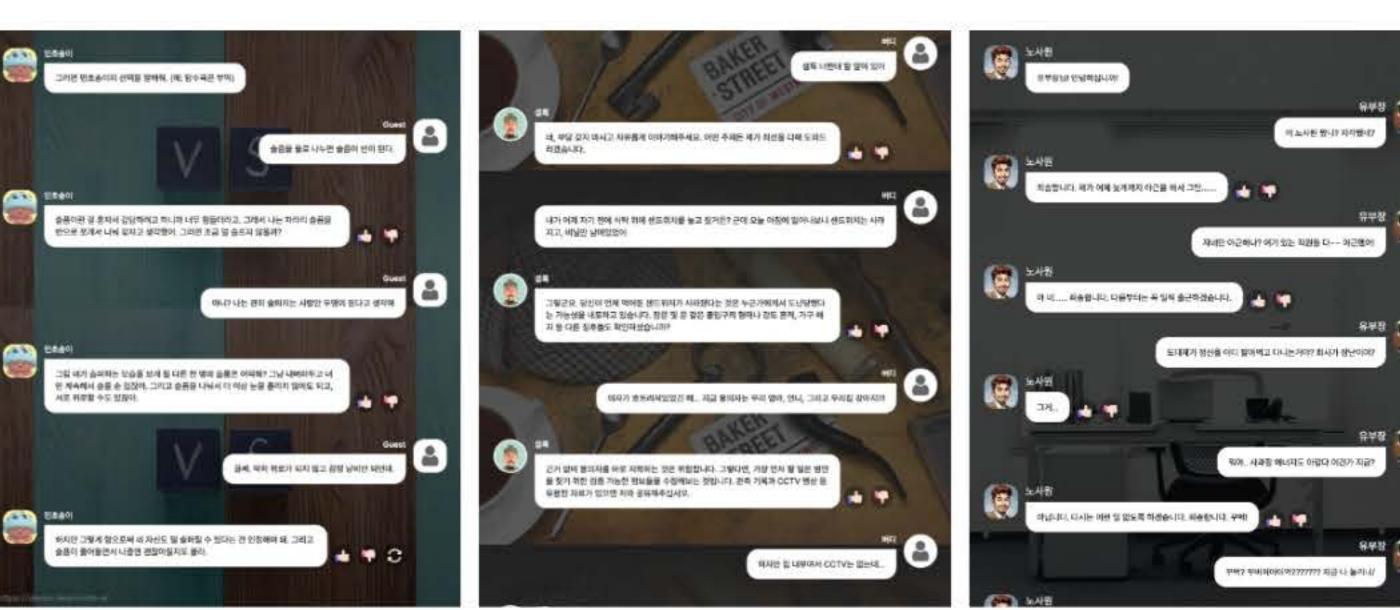
A world where people and Al can communicate freely



DearMate pet dog chatbot

Nowadays, the natural language processing (NLP) market is rapidly growing in the field of artificial intelligence (Al). NLP is one of the main fields of Al that studies the interaction between computers and human language. This technology is widely used for Al speakers and chatbots. In particular, many big techs released large language models that can transfer information and assist work with the introduction of ChatGPT. In addition, a lot of attempts are made to develop chatbot technology that can empathize with users' emotions, give advice, and have conversations, in addition to the realm of reason. It was forecast in 2022 that the Al chatbot market will grow to \$ 9.4 billion (approximately KRW 10.6 trillion) in 2024, but estimated amounts that greatly exceed this figure are emerging. As a startup specializing in natural language processing, TUNiB Co., Ltd. was established mainly by Kakao Brain NLP team members in 2021. TUNiB holds the technology for chatbots based on generative Al using its own large language model and natural language processing technology that drives the Ah based chatbot. As it also has its own technological prowess and technology of utilizing external language models, TUNiB has released about 50 different types of persona chatbots and NLP APIs since its establishment, such as dog chatbots and English; speaking cloud chatbots. With the investment invited from Pearl Abyss, DSC and Naver in November 2021, TUNiB 's potential was recognized. In July 2022, TUNiB signed an agreement with the Seoul Metropolitan City to provide various work experiences to young job seekers, demonstrating that startups can also secure corporate competitiveness while contributing to society.

Laying the foundation for domestic open data



Sampled actual conversations on DearMate

It is important to secure quality data for Al learning to train high-performance Al models. That is, securing Al training data is the core task of the data dam building project and an important task of the Digital New Deal policy. However, domestic Al companies have relied heavily on overseas open data, which made it difficult to utilize such data for domestic service development due to the uniqueness of the Korean language and the relatively small number of language users. TUNiB applied for the ICT Funding Project to contribute to laying the groundwork for domestic open data using its technology, based on the judgment that service development requires researchers with expertise in natural language including Korean parts of speech and professional data collection and processing methodologies. The detailed tasks of the '2022 data building for the Al learning project' applied for by TUNiB were 'Korean BlenderBot data' and 'Korean common sense sentence data.' In the case of the former, the purpose of the task was to increase the level of open-domain conversation by improving the Korean version of the BlenderBot (cutting-edge global chatbot) dataset with higher quality than the original. In the case of the latter, the purpose was to secure and build Korean common sense sentence data in order to make it available for training the generative model. While implementing those two tasks, TUNiB performed modeling for data building, and the modeling was used to prove the validity of the dataset. The tasks were successful as the modeling target performance was exceeded. The tasks recorded competitive performance compared to the papers used as references. The achievements were quite meaningful as TUNiB could additionally learn from the conversation dataset published on Al Hub while considering the actual service since TUNiB provided the conversation chatbot service, and TUNiB demonstrated the possibility of advancement when performances were compared. TUNiB also provided baseline modeling codes that can directly help organiz

Difficulties of the past turned into knowhow of the present

Although all targets were overachieved, the project was delayed due to restrictions on face-to-face meetings owing to the spread of COVID-19 and COVID-19 infection by the persons in charge of practical business. Therefore, TUNiB had to implement the project while devising an efficient way to proceed. All the challenges felt like difficulty at the time, but it became know-how that is quite useful when implementing multiple projects now. It seems the dataset will be utilized in various ways as it is now. However, good-quality data is still lacking when developing good Al engines. In particular, papers are a collection of logical and refined expressions, but paper data in Korea is distributed among affiliated organizations of the specialized institutions compared to English-speaking countries. Therefore, it is not easy to accumulate even open data. To develop an Al engine that can be utilized in more diverse fields, the dataset needs to be built for each field, which will be a great steppingstone for future growth.

PICT Funding Project

Dedicated Institution
 Business Objective
 Business Description
 Data building for Al learning
 Data building for Al learning

P Company information

* CEO

Type of Business Software development and supply
 Year of Establishment 2021. 03
 Website www.tunib.ai

Park Gyubyeong





TUNIB

CATCHSECU

MACHBASE Value Data Driven Intelligence

EBS

O.NE PEOPLE Co., Ltd.

P Core Technologies and Achievement Highlights

- CatchSecu won the grand prize in the Personal Information Technology Startup Challenge hosted by the Personal Information Protection Commission

A future society in which privacy protection has more importance!



With the 4th Industrial Revolution in full stride, there is a paradigm shift to the data economy. Accordingly, the personal information protection market is also growing rapidly, but the supply of experts has not kept up the pace. In fact, according to the personal information protection fact-finding survey announced by the Personal Information Protection Commission in 2021, 98.5% of private companies do not have a dedicated personal information protection manager. However, 72% of the personal information protection managers assigned by mandate at public institutions are lacking in expertise with less than 3 years of experience.O.NE PEOPLE Co., Ltd. is a company that operates CatchSecu, a B2B service that automatically manages customers' personal information held by the company from collection to final disposal. We successfully carried out the commercialization of the CatchSecu service in the ICT Funding Project. Staying abreast of the recent issue of personal information protection, we have used both Al and cloud technology to innovate the shortfall of experts and support them to solve problems in the personal information protection market with high efficiency and low cost.

Tricky personal information collection and management! All hassle-free with CatchSecu!

The core technology of CatchSecu is to analyze the type and purpose of personal information using artificial intelligence algorithms and to automatically set consent forms and regulatory requirements necessary for collecting personal information from customers. This helps marketers and operators to legally collect and manage personal information in compliance with relevant regulations, even if there is no personal information protection expert employed by a company. Companies can use CatchSecu with confidence because it boasts a personal information algorithm with 99.8% accuracy and completed a legal review on its regulatory automation algorithm. In addition, when the personal information processing status is entered into CatchSecu, the artificial intelligence algorithm analyzes the type and purpose of personal information and automatically creates the necessary consent form, allowing ease of use. A form template (Catch form) to collect personal information can be created with the consent form produced like this, and it can be shared with a URL or QR code, making it easier to collect personal information.

Continuing a unique move in the personal information protection industry market



According to the Korea Information Security Association, the information security industry market is recording a double-digit growth rate every year. Sales of the domestic information security industry in 2021 increased by 13.4% year on year to KRW 13,861.1 billion, while overseas sales increased by 8.5% year on-year to KRW 1.913 trillion in 2020. Even in the information security industry market, with its rapid growth in full swing, O.NE PEOPLE is pioneering the market. Since its establishment in 2018, O.NE PEOPLE has shown remarkable growth, such as selecting the TIPS program and attracting seed investments. In particular, in 2022, CatchSecu was introduced and garnered keen attention from industry insiders. At the time of ICT Funding Project support, CatchSecu was reaching the final phase of its development. The accelerating program of the support project has helped CatchSecu grow the business and attract investment. But there were also difficulties. After the initial investment, there was uncertainty for us to prepare an IR for selection in a support project in a few years. From the order in which an IR pitch deck should be prepared to the calculation of corporate value, the areas to be worried about and dealt with seemed insurmountable to handle. Fortunately, as the IR education and mentoring provided by the program progressed, preparations for investment attraction were completed one at a time. Among them, the most memorable aspect was the networking venue with senior security companies. The meeting that seemed to take place by chance turned into an opportunity and provided a foundation for growth.

Support projects that underpin remarkable growth

After participating in the support project, O.NE PEOPLE has earned high praise for its technological prowess, and is positioning itself as a valuable service in the market. Last year, we mainly handled many small businesses, but this year, starting with the Korea Internet & Security Agency, we succeeded in pioneering markets for public institutions such as the Seoul Economic Promotion Agency, the Junggu Cultural Foundation, and the Korea Aerospace Research Institute. We participated in the country's leading competitions and programs, winning numerous awards. In 2023, the Ministry of Science and ICT selected CatchSecu as an excellent information protection technology service, and in 2022, our product won the grand prize in the Personal Information Protection Utilization Technology Development Challenge of the Personal Information Protection Committee. We also participated in the 2022 K-Startup information security growth company leap program hosted by the Ministry of Science and ICT. In the IR pitching contest held under the program, we won the Minister of Science and Technology Information and Communication Award, and successfully attracted Series A investment from Piolink, followed by a string of good news. Moreover, from the time of the support project, the number of paying customers of CatchSecu has more than tripled, and recently, our product was concurrently selected for the 2023 K-Startup Information Security Growth Company Leap Program and the K-Security Startup Global Challenge for two consecutive years. O.NE PEOPLE has achieved rapid growth in a short period of time with customized services for personal information protection. We strive to usher in a world where personal information protection is a basic undeniable right.

PICT Funding Project Dedicated Institution

 Business Objective Information Protection Cluster Business Description Training of information security professionals

Korea Internet & Security Agency

Company information

CEO Cho Ayoung Type of Business Development and supply of industry system soft-up

 Year of Establishment 2018.03

 Website www.catchsecu.com

TIME LINE



service)' by the Ministry of Science and ICT

Towering above the rest as the world's best time-series DBMS



TUNĬB

CATCHSECU

MACHBASE
Value Data Driven Intelligence

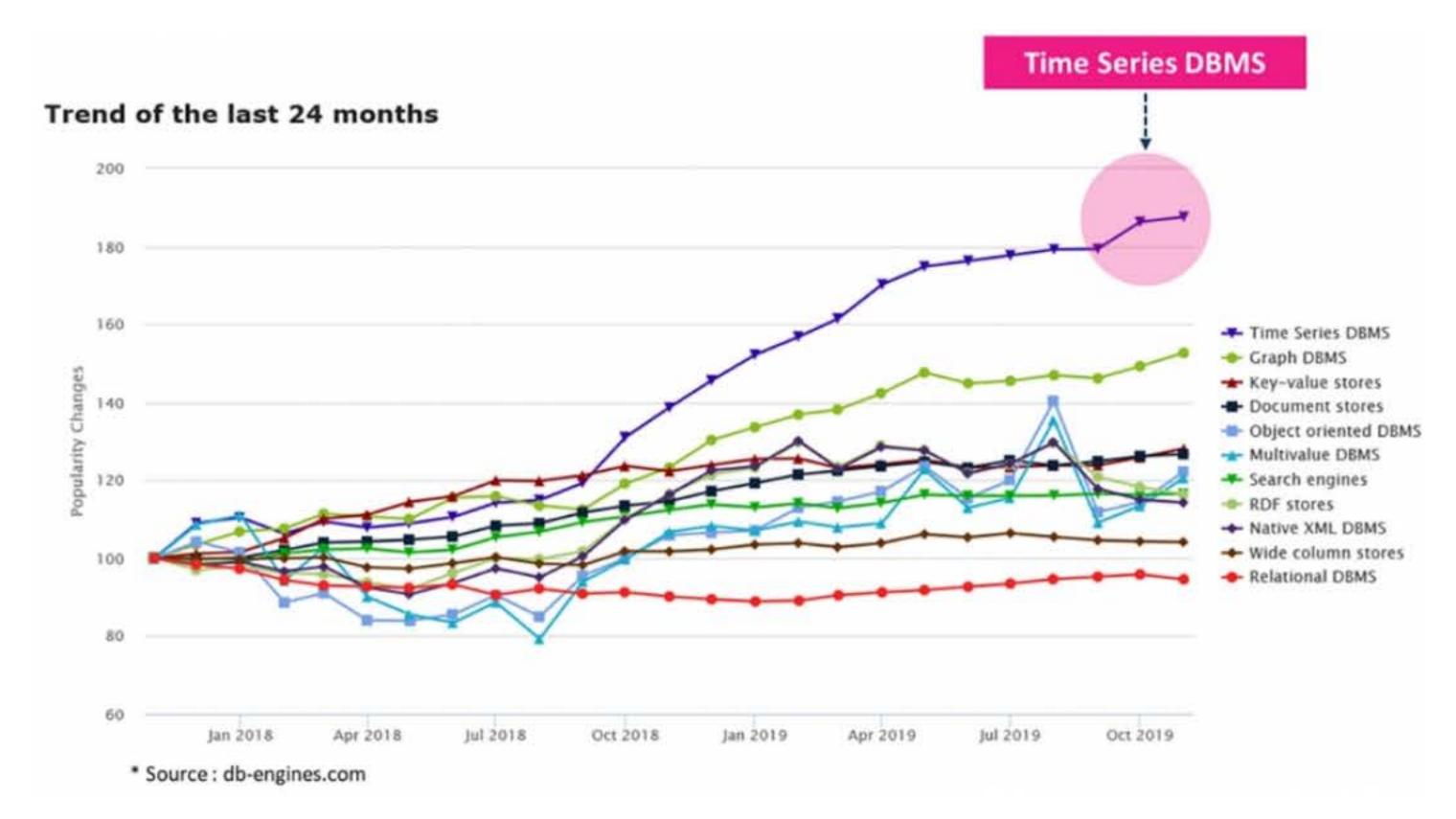
EBS

Machbase Co., Ltd.

P Core Technologies and Achievement Highlights

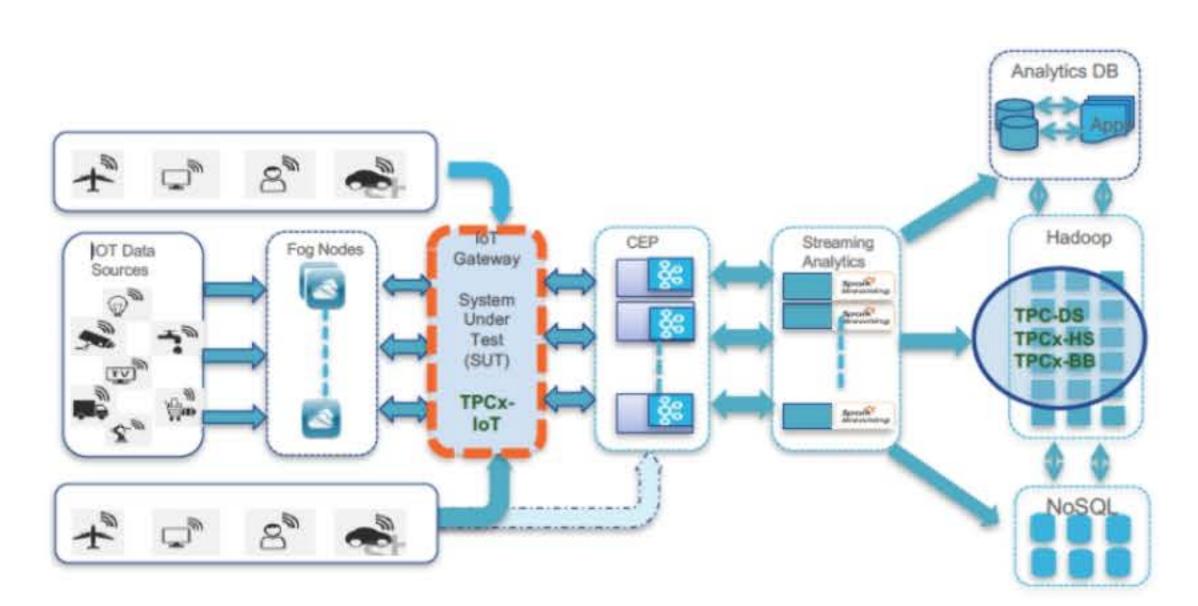
- Boasts the world's highest performance time-series DBMS commercial software (World's No. 1 performance evaluation in the TPCx-IoT field)

Time-series database in the spotlight in the IoT era.



What methods can be used to efficiently process exponentially accumulating data in a short period of time? Most experts point out a time-series database (TSDB). Time-series data refers to data stored every second, every minute, or every hour, and so sensor data has the characteristics of time-series data, given that sensed values are stored according to the passage of time. For processing such time-series data through an existing relational database, it is inevitable that data processing performance deteriorates as the amount of data increases over time. A time-series database was developed to solve this problem. In the field of time-series database, which company has developed the world's most powerful time-series database? The world's leading software companies will come to mind first, but in fact, it is a Korean company known as Machbase Co., Ltd.

Machbase, a company with the world's best technology



Machbase boasts the best technology in the field of time-series DBMS (DBMS: Database Management System). According to performance evaluations conducted by the international performance evaluation organization TPC (Transaction Processing Performance Council), our original technology has developed the time-series data DBMS (product name Machbase) that surpasses the world's leading companies with overwhelming data processing speed and has been top-ranked in the world for five consecutive years in the field of 'TPCx-loT'. Until May 2022, it maintained the highest DBMS performance to hold the top rank for three consecutive years after beating out the U.S. open-source DBMS product 'Hadoop' to rank first in the loT field for the first time according to the TPC performance evaluation in 2019. However, in May 2022, it was overtaken by China's Alibaba, which received a performance evaluation with a processing speed of 4.8 million per second.

Retaking the No. 1 rank with ICT Funding Project

Through the ICT Funding Project, Machbase has undergone the procedure to receive an internationally recognized performance evaluation once again. The internationally recognized performance evaluation called TPCx-loT requires a difficult procedure to conduct the test. The review process for confirming the test results also requires a high cost, requiring the hardware and environment needed for the test to be built with the participation of TPC member companies. In the 2022 performance evaluation, the support of the Korea Telecommunications Technology Association (TTA), a member of TPC, and the fund project were instrumental in this. For sure, the process leading up to the performance evaluation was not an easy one. In improving the test scores, since it is necessary to measure performance after obtaining a large volume of data in a high-1 performance hardware environment, which was unavailable to secure in South Korea, the hardware was carried out in conjunction with major companies, such as Intel and AMD.Our commitment and diligent efforts have reaped rewards. On December 18, 2022, Machbase proudly regained its top rank with a processing power of 5.7 million per second through 'Machbase 7.0.6 version'. This performance is a 69% improvement in processing power over our March 2021 record of 3.4 million, and represents a 20% improvement above Alibaba's record.

Hardware that stands tall as the world's No. 1 company

Machbase provides an opportunity to take a step forward based on the achievement of being the world's No. 1 record in processing power for five consecutive years. Although the time-series database developed by Machbase boasts world₁ class performance, the product's strengths have been overlooked in an objective evaluation on account of low domestic and international market awareness and a lack of certified results of product performance. However, through these tests, we were able to publicize our technological prowess and dispel any doubts about product performance among customers. Moreover, we have been able to successfully spotlight our proprietary time-series DBMS and solutions in the public sector, such as public facilities, railway operators, and electric/ power utility. Based on this result, Machbase plans to forge ahead with the challenge of global marketing and sales promotion. We look forward to Machbase's catapult to reach the world's No. 1 record in sales, not only processing power, with its strong prospect as a domestic company boasting the world's best DB processing technology.

PICT Funding Project

Dedicated Institution
 Institute for Information & communication Technology Planning & evaluation

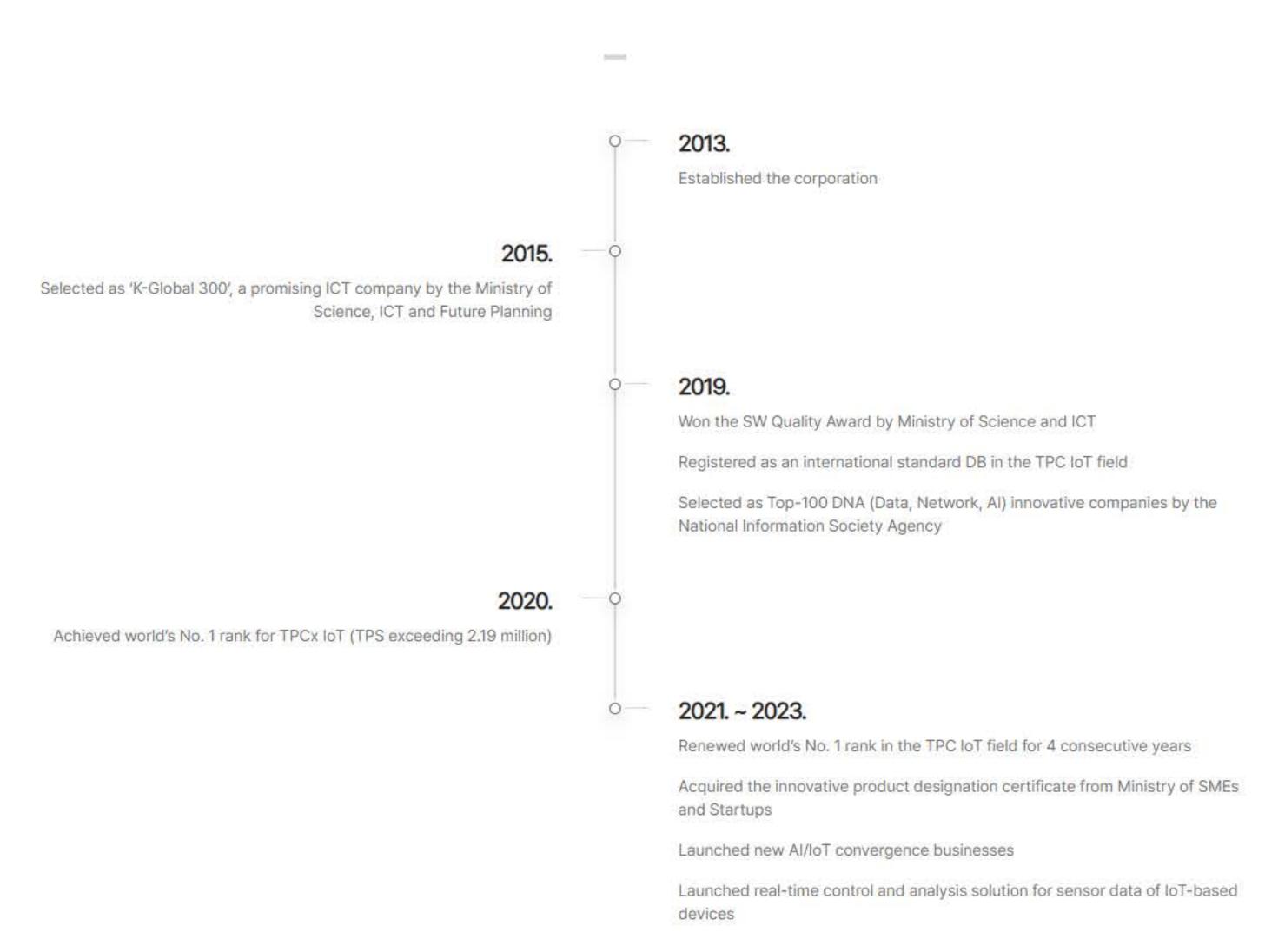
Business Objective Global ICT Innovation Cluster Creation
 Business Description HPC Innovation Hub

P Company information

Website

CEO Kim Seongjin
 Type of Business Development and supply of software
 Year of Establishment 2013.

https://kr.machbase.com/





TUNÏB

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MACHBASE
Value Data Driven Intelligence

EBS

Korea Educational Broadcasting System

P Core Technologies and Achievement Highlights

- Introducing a production model that incorporates cutting-edge video technologies such as in-camera VFX and virtual humans, which can be effectively utilized in broadcasting content creation

Produced, Korea's first extended reality (XR) talk show.

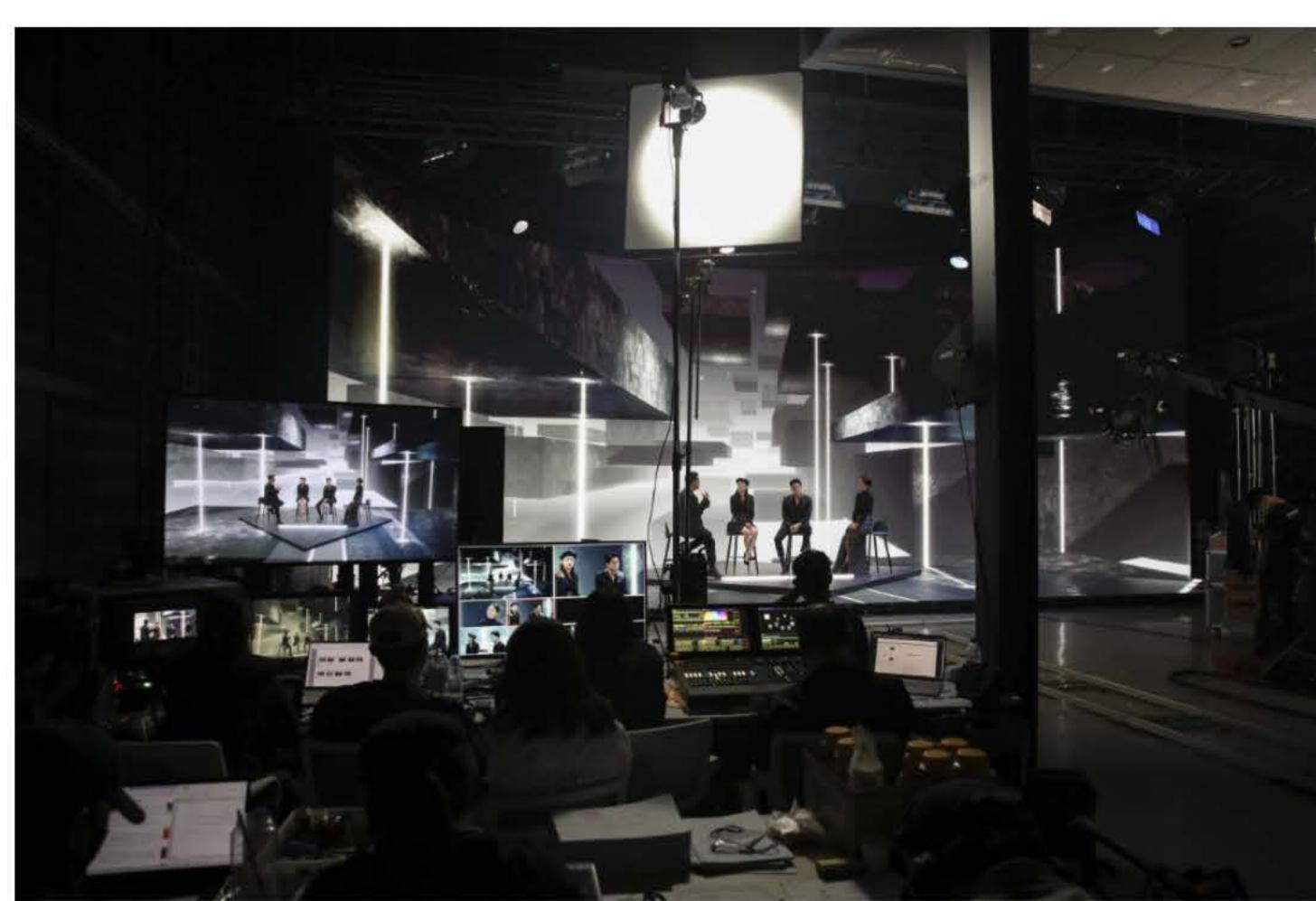


Photo of filming o

VFX refers to visual special effects. Here, FX is an abbreviation for effects. VFX is a general term for technology that creates nonexistent visual effects by using computer graphics or analog techniques in video. Special effects (SFX) were used in video production to show things that do not exist in reality before computer graphics (CG) technology became available. Initially, CG technology was used as a means of assistance to SFX. The application of CG technology was extended to the filming areagoing beyond the existing SFX area such as digital color correction enhance the visual effect of video. VFX is a new term used to refer to this. VFX work includes lighting, composing, and animation, in addition to digital characters. The Oscars in the US have VFX (best visual effects) in the technology category, along with editing, makeup, costumes, and art. Just like VFX in recent movies, demand for special visual effects is rapidly increasing in broadcasting. In addition, VFX is expanding its application and business area to the metaverse such as virtual production and virtual human, beyond simple special effects support. Foreign broadcasting companies are often more proactive in adopting visual technology compared to the Korean broadcasting industry. While the Korea Educational Broadcasting System (EBS) has experimented with applying visual technology internally, there has been a tendency to overemphasize its strengths by fully embracing the technology. Meanwhile, EBS successfully produced "The Dreamers," the first extended reality (XR) talk show in Korea, thanks to the support received from the "Laying the foundation for next-generation broadcasting growth project" managed by the Ministry of Science and ICT, specifically in the field of "new tech convergence content." EBS has been actively pushing the boundaries of video broadcasting technology by incorporating new technologies such as in-camera LED technology and virtual humans in content production. These advancements have introduced novel elements that were previ

The attention-grabbing VFX (In-Camera VFX) and virtual human visuals that captivated the viewers.



Photo of virtual humans in

"The Dreamers" (directed by Lee Misol and Jeong Jaeyong) is a TV series that narrates the gripping tale of a shocking crime set in a highly technologically advanced future world and how it is ultimately solved. Viewers are actively engaged in discussions about the storyline. The mesmerizing stage, which dynamically transforms in sync with the narrative using cutting edge XR (eXtended Reality) technology, provides a synesthetic experience, immersing viewers into a fantastical future world. Notably, the utilization of virtual humans, created through a combination of deepfake technology and full CG interlinked with motion capture, has captured viewers' attention with their dynamic gestures and lifelike expressions. The production team completed a talk show using in camera VFX throughout the airtime for the first time in Korea. In-camera VFX technology synthesizes and visualizes a background created by CG with images currently filmed in real time and also called virtual production. In each episode, future criminals or victims were brought to life using virtual humans, employing three different implementation methods: full CG virtual humans linked with real-time motion capture, deepfake, and volumetrics. These cutting-edge technologies, which are not commonly utilized in broadcasting, were made possible through the support of the ICT Funding Project. Certainly, there were challenges in producing the program due to the application of a completely new visual effect technology. Particularly for "The Dreamers," the difficulty lay in ensuring a seamless flow during filming, as the show primarily consisted of a talk show format despite incorporating extensive technology. The use of in-camera VFX technology with LED, which was not yet fully commercialized, posed additional risks during filming. To address these challenges, the production team relied on frequent rehearsals to maintain the talk show flow during actual episode filming. They dedicated over 10 days to rehearsal, meticulously coordinating lighting, LED backgroun

Planning to increase the use of new broadcasting technology

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 Business Description Laying the foundation for next-general

Kim Youyeol

Business Description
 Laying the foundation for next-generation broadcasting growth

Korea Radio Promotion Association

Company information ■ CEO

Type of Business Broadcasting company
 Year of Establishment 2012. 5.
 Website www.ebs.co.kr

TIME LINE



2021. 3.

Supported interactive learning such as interactive video classes

Educational Broadcasting System Act