

META BIOMED

Case Study



Photo courtesy of Meta Biomed

Challenge

Korean health and medical materials and devices manufacturer Meta Biomed faces strict and complex checks before gaining regulatory approval on new products. It required a modern platform to centralize its product development data and support a more structured way of working to boost innovation and speed up certification as it aims to take the lead in the global surgical sutures market.

Solution

Meta Biomed made the transition from paper to digital to document every product design, formulation and experiment company wide, moving all data to a centralized database using the 3DEXPERIENCE platform and its License to Cure for Medical Device industry solution experience.

Benefits

With all data stored in one place, management at Meta Biomed now has a complete overview of the company's operations, while employees are empowered to collaborate more effectively, improve product quality, speed up product development and reduce costs, leading to faster innovation and better patient outcomes. The company now has the technology in place to build on its vision to bring analysis and simulation to its product development processes.



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– Suk-Song Oh, CEO, Meta Biomed

PERSONALIZED HEALTHCARE

Healthcare companies are transforming the way they develop new products and materials. Leaders in the field are now incorporating digital transformation technologies with 3D virtual simulation to not only speed up their research and development (R&D) efforts, but test new products on virtual patients to determine how they will respond in real life to different individuals and deliver treatment customized to each patient's unique biology.

Meta Biomed is one of the world's current leading health and medical manufacturers in the field of dental fillers, sutures, medical devices and bio-related products. The Korean company's mission is to prevent and treat human diseases in pursuit of human longevity, health and happiness. Through its Technology Research Center, it develops biocompatible medical materials, including biodegradable polymer sutures designed to help relieve pain and ensure fast healing while helping medical professionals to perform precise procedures with ease.

Medical breakthroughs by the company include developing new bone restoration materials for orthopedics, which are currently awaiting approval for mass production. As it looks to the future, Meta Biomed also plans to explore the role it will play in providing customized medical services for patients, and hopes to use simulation and virtualization technologies to determine the best sutures and materials for each individual patient ahead of surgery. All of this will be made possible with the **3DEXPERIENCE**® platform on cloud from Dassault Systèmes, which the company has put in place as it establishes itself as a digital leader in the industry.

"As a small but strong company centralized in technology, we make great efforts to actively invest in R&D," said Suk-Song Oh, CEO at Meta Biomed. "We are the seventh company in the world to develop a surgical biodegradable suture certified by the FDA and European CE Mark, currently exporting to more than 100 countries in the world."

CLOUD FIRST

Meta Biomed's primary driver for choosing the **3DEXPERIENCE** platform was to improve collaboration across its business, particularly in its R&D activities. The company runs hundreds of tests and experiments, but until recently didn't have a clearly defined way of sharing information and knowledge between individuals and teams. Information was documented on paper and the company lacked a centralized database to store its data.

Keen to accelerate its digital transformation, the company opted for a cloud-based implementation of the **3DEXPERIENCE** platform. This suited the business on many levels: it could get

up and running quickly as there was no need to install servers and software; it didn't need to invest in additional hardware to run the new technology; users could access the platform at any time and from any place; all data and intellectual property was protected from data loss and unauthorized access; and it was guaranteed ongoing access to the latest software features and upgrades, as well as the ability to roll out new applications and functions when required.

"The **3DEXPERIENCE** platform from Dassault Systèmes is not only a reliable and secure cloud-based solution, but also is the foundation for Meta Biomed's digital transformation," said Yeon Chun Yoo, vice president at Meta Biomed.

DIGITALIZED R&D

The first stage of the **3DEXPERIENCE** platform implementation involved setting up an enterprise product management system (PMS) using the cloud-based electronic lab documentation solution BIOVIA Notebook. Paper-based information from all company-wide experiments was transformed into digital documents with the tool, giving researchers and scientists a central place to store and share their finds, allowing them to collaborate effectively on projects, analyze product development and effectively eliminate time-consuming and error-prone manual searching and documentation processes.

All the company's product development data is now held digitally in one centralized database. This new way of storing information has transformed Meta Biomed's approach to recording experiments. Before using BIOVIA Notebook, the company couldn't keep a record of all of its research and only stored data covering successful projects. Now, the company is able to document everything, even projects that fail or products that never make it to market, allowing researchers to learn from past mistakes and reuse knowledge.



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With full data transparency, management is also able to gain a clearer view of the company's activities, ensuring full visibility and traceability of product development, while employees can focus on improving product quality, meeting deadlines and reducing costs.

"Integrating and managing data has become very convenient," said Min Kyeong Shin, assistant manager CM R&D team at Meta Biomed. "The BIOVIA Notebook module transforms paper-based research into digital data, facilitating data management and quick and easy access to the information we need. We are

now able to achieve full traceability and transparency of our data records.”

As a global business, Meta Biomed now benefits from the ability to continuously monitor, manage and act on the needs of its remote regional sales and marketing operations.

“As all our work processes have been integrated into a single platform, we were able to clarify the roles between teams through project schedule monitoring with ENOVIA,” Shin said. “We really feel that this is a true collaboration since we can discuss projects together at anytime, anywhere using a single source of data. We are also managing and monitoring the needs of our remote offices on the platform.”

QUALITY GUARANTEE

Advances in surgical techniques, materials and devices, coupled with growing patient and professional expectations mean that healthcare providers are under more pressure than ever to ensure better surgical recoveries and patient outcomes. Meta Biomed believes these results can only be achieved by embedding quality throughout the supply chain.

“Meta Biomed has a quality-first policy,” Oh said. “We strive to earn customer satisfaction and minimize any customer complaints. We are committed to providing products that prioritize safety and customer satisfaction using the best technology.”

Because of the nature of the products the company develops, it must meet strict industry certifications and regulations before anything goes to market. Having a centralized platform to store its product data has not only improved the speed at which it is able to develop new products, but it has helped the company to gain regulatory approvals faster too.

“Managing data held in different folders and files made it difficult to check and keep track of the project progress, which was very time-consuming for the approval and certification of new products,” Yoo said.

“As the **3DEXPERIENCE** platform improved visibility and enabled us to reuse data, it has reduced development errors and increased quality,” Shin added. “As we could reduce errors for strict approval procedures, we have been able to shorten our development times.”

PROGRESSIVE PARTNERSHIP

Throughout the implementation process, Meta Biomed has worked closely with Dassault Systèmes and local business partner Rich & Time to get the most from its new technology. “Executives from Dassault Systèmes and Meta Biomed have been holding bi-weekly meetings to check on the project status and discuss and decide on future strategies,” Yoo said. These steering committee meetings not only ensure project milestones are met on time but continue to guide the company as it transitions into a digital, patient-centric business.

Rich & Time has also played an invaluable role in the success of the technology rollout.

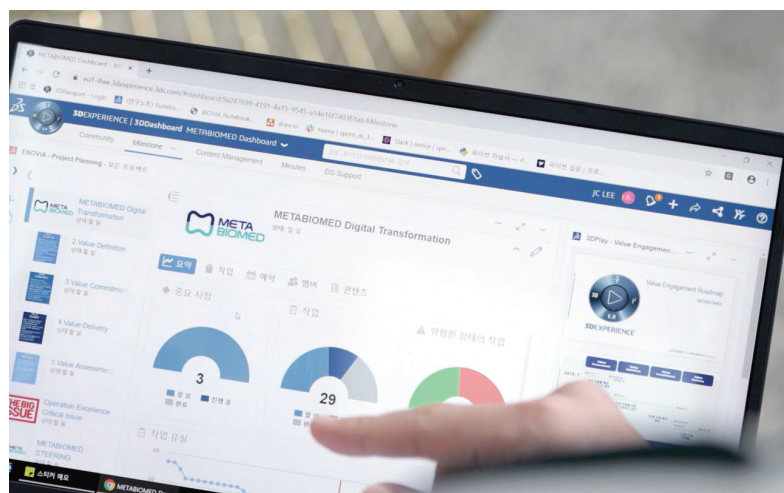
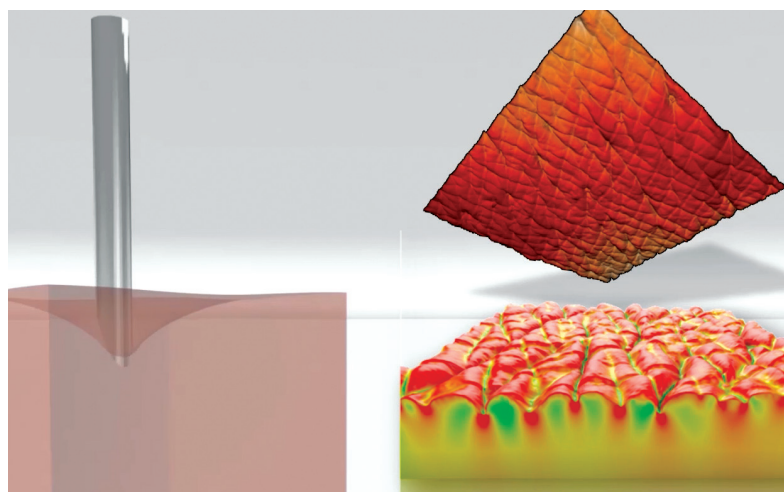
“Rich & Time worked closely with us on everything from system deployment and training to post-management and gave us all the support we needed,” Yoo added. “With the help of Rich & Time in implementing the **3DEXPERIENCE** platform, Meta Biomed has been able to identify the direction we want to take and explore the possibilities for the future.”

More about the solution

The License to Cure for Medical Device solution allows companies to eliminate scattered processes and data and to “embed” regulations as an asset, optimizing quality and compliance and reducing cost and time to market. This end-to-end solution supports all aspects of a medical device company’s quality system and regulatory compliance ISO-regulated design controls.

Benefits:

- Accelerate time-to-market for medical devices
- Improve product and process quality
- Streamline regulatory filing
- Enhance patient experience



Top image: Simulation of skin type to offer the most appropriate sutures and materials for best possible surgical outcome.

Bottom image: Real-time collaboration on the platform managing and monitoring the needs of all Meta Biomed offices

Focus on Meta Biomed

Founded in 1990, Meta Biomed is one of the world's leading health and medical device manufacturers. The company is based in the Republic of Korea and specializes in dental devices and materials, sutures, synthetic bone fillers and other bio-related products.

Products: Dental devices and equipment, surgical sutures, bone graft substitutes, medical devices

Revenue: USD 46 million

Employees: 233

Headquarters: Chungcheongbuk-do, Republic of Korea

For more information: www.meta-biomed.com

Focus on Rich & Time

Rich & Time is a Korean IT SME that provides services in consulting, software sales and maintenance and Q/M process simulation to various industries including manufacturing, finance and public agencies. As a partner of Dassault Systèmes, it supplies the 3DEXPERIENCE platform, CATIA, DELMIA, SIMULIA, BIOVIA, product data management (PDM) and product lifecycle management (PLM) solutions.

For more information: <http://www.rntime.com/>

 RICH & TIME Co., Ltd.

PATIENT-CENTRIC FUTURE

As the company looks to the future, it plans to explore the potential of delivering customized medical services for patients and hopes to use the 3DEXPERIENCE platform to support this new patient-centric business model.

Using 3D virtual simulation technologies, it hopes to refine its chemical and ergonomic engineering processes and build digital twins of patients to better understand how

biocompatible materials react and respond to each individual. The 3DEXPERIENCE platform will provide the foundation for Meta Biomed product development engineers to simulate virtual patients, i.e., to accelerate their innovation process using digital human twins of their patient populations. Collaborating on a common platform, they will not only be able to capture the most up-to-date market information on their products, but predict outcomes in advance to deliver the best products and most patient-centric customer experience.

Meta Biomed will also look at how it can harness virtual reality and augmented reality technology to help surgeons, the end users of Meta Biomed products, deliver enhanced, effective surgical experiences by performing simulated surgeries using real-world data powered by the 3DEXPERIENCE platform.

So, when a patient goes to a surgeon for a facelift, for instance, the plastic surgeon can offer the most appropriate sutures and materials depending on the patient's skin type, ensuring the best possible surgical outcome.

Additionally, the company aims to deliver new business value by taking advantage of machine learning, artificial intelligence and the internet of things to transform its own development processes and establish a manufacturing environment that delivers the best yields.

"Meta Biomed will increasingly focus on personalized healthcare," Yoo said. "In order to achieve this, data and simulation are very important. We can work flexibly and efficiently by accumulating, sharing and utilizing data created in development, production and sales. Our customers can also get a glimpse of the predictions and results before and after surgical procedures so they can expect high-quality services based on accurate data. We expect that digital data and customer experiences will help us increase our innovation capabilities and competitiveness as we aim to lead the market."

All of this will be achieved using the 3DEXPERIENCE platform as Meta Biomed continues to build on its relationship with Dassault Systèmes.

"Meta Biomed will accumulate digital data and experiences using the 3DEXPERIENCE platform to enhance our technology and competitiveness as we strive to become a global B2B and B2C company," Oh said. "We will provide the best products for human life and health. With a spirit of innovation, we aspire to be the company dedicated to society and our customers, as well as the development of the medical industry."

Our 3DEXPERIENCE® platform powers our brand applications, serving 11 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the 3DEXPERIENCE Company, is a catalyst for human progress. We provide business and people with collaborative virtual environments to imagine sustainable innovations. By creating 'virtual experience twins' of the real world with our 3DEXPERIENCE platform and applications, our customers push the boundaries of innovation, learning and production.

Dassault Systèmes' 20,000 employees are bringing value to more than 270,000 customers of all sizes, in all industries, in more than 140 countries. For more information, visit www.3ds.com.

