CASE STUDY

Shinseigiken uses Octave's Forte 3D for effective plant design and global business expansion



Key facts:

Company: Shinseigiken Co., Ltd.

Website: www.shinseigiken.co.jp

Industry: Plant engineering

Octave products used: Forte 3D *(Intergraph Smart 3D)*

Shinseigiken specializes in delivering comprehensive plant engineering services, from basic to detailed designs and on-site construction supervision.

Shinseigiken adopted 3D CAD in 1998. In doing so, it took an early lead among its competitors. Since then, Shinseigiken has been engaged with the 3D design of various plants. Although the company had already been using a competitor's offering for more than 20 years, in 2021 it made the strategic decision to use Forte 3D. This move was made to improve productivity, strengthen competitiveness and facilitate the expansion of its global business.

Overcoming challenges

Before implementing Forte 3D, Shinseigiken evaluated the solution and concluded that it possessed the same functionalities as the existing 3D CAD system. A new capability that was not present in the existing system was the "to-do list" feature. This tool was appealing, alongside the cost of ownership that promised a productivity increase.

However, the transition to a new system was not without challenges. This process required existing CAD engineers to learn how to use Forte 3D. Some of the company's clients expressed their concerns surrounding the potential impact on the quality of the deliverables due to the system change. Shinseigiken carefully reviewed these concerns, from both engineers and clients, then started to identify solutions to address their uneasiness.

Realizing results

Initially, Forte 3D took 20% longer to complete tasks than the existing CAD system. The existing CAD system benefited from internally developed macros that increased productivity. This feature has not been implemented in Forte 3D at the time. The 20%-time difference was attributed to the institutional knowledge gained from 20 years of experience with the conventional CAD system. The company expressed its confidence in Forte 3D and that mastering the tool would soon enable them to bridge the gap and increase productivity even further.

Consequently, Shinseigiken identified several areas for improvement and began discussions to address these challenges.

Key benefits:

- The product is easy to learn. Those who are already trained on the system are then able to teach others, increasing the number of users
- Users may develop customization tools to build their own catalogs and specifications
- The support assembly meets the required design standards and significantly shortens the design work process
- The ability to develop a program that helps publish drawings, to list important information required to produce the drawings, to automate the manual work

Shinseigiken addressed its key challenges and achieved results by:

Building a catalog with a focus on Japanese Industrial Standards (JIS) (pipe, fittings, valves) / steel materials

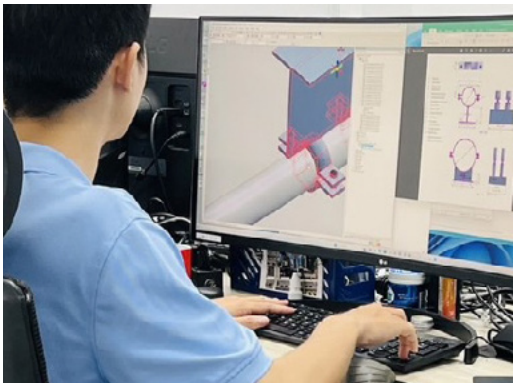
Shinseigiken built a catalog of pipes (pipes, fittings and valves) and steel materials, based on JIS, which was missing from the standard Forte 3D catalog and specifications. Additionally, employees mastered the VB.NET programming skills needed to illustrate special shapes and successfully created over 1,100 catalogs and specifications within just nine months.

Reducing the time and effort for 3D modelling

While the frame, equipment and piping could easily be input using standard functionalities, the sheer number of support elements posed a challenge. This caused problems with standard workflows exceeding the work schedule. To streamline the input of support elements and expedite the process, a new tool was developed. This tool can perform a series of tasks in a single step, including the creation of frames, support fixtures, base plates, nuts and bolts, addition of parts and the incorporation of reference points for drawings, adhering to the company's design standards. This solution has substantially decreased the time needed for inputting support elements.

Automatically generating the information needed for construction drawings

Shinseigiken developed a drawing generation program that automated the information needed for creating production drawings - a feature that was absent in the standard functionality. As a result, semi-automated drawing generation and semi-automated material take off capabilities are now available.



Shinseigiken are currently in the process of further developing tools to improve efficiency. Upon the implementation of these tools, the company expects a 20% reduction in work time, eliminating the time difference with the conventional CAD system. Forte 3D is easy to master and the number of users within the company is steadily growing as individuals who have acquired expertise through the internal training program begin to share their knowledge of the software.

Moving forward

The smooth transition to Forte 3D is due to Shinseigiken's confidence in Octave. It can easily reach out to Octave for support in case of problems or questions. The company now aims to enhance the system's usability even further by continuing to collaborate with Octave and expanding the number of Forte 3D users.

Sixteen years ago, Shinseigiken established a branch and office in Vietnam and currently has a team of 50 employees. Shinseigiken's future vision is to leverage the Vietnamese office and the talent sector in this region as a base to further expand its global business.

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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