

MASTER MODEL DEVELOPMENT FOR WATER TREATMENT SKIDS

An Enventure Case Study

Enventure created the Master Model of a full product family for a Manufacturer of Water Treatment Skids, utilizing engineering best practices as well as innovative CAD technologies.



About the Client

The Client is a US based provider of Water, Wastewater & Reuse solutions, serving Customers across 70 countries and 5 continents. The Client is a well respected industry leader, known for worldwide installations that are proven to be reliable and efficient. The Client provides solutions for desalination, water, wastewater, waste-to-energy, recovery & reuse, and food & beverage processing.



Business Need

The Client had developed their product-line over many years and were primarily focused on offering customized solutions. The fact that solutions were tailored to customer needs was of real value to end users, as the final installation would meet the customer expectations perfectly well. However, this 'custom solutions' approach placed a fair bit of load on the Client's internal engineering team, as there was substantial effort required for pre-bid engineering, as well as detailed engineering when the contract was awarded. So the Client needed to find a solution that would reduce their engineering efforts, without compromising the end customer experience. This would make the offering more cost effective, as well as reduce the time to deploy a solution.

After evaluating various options on how to achieve this, the Client decided that the best approach would be to create a Master Model for each product family so that customization becomes easier, quicker and more efficient. But this would involve a substantial focused effort from the internal engineering team and that seemed difficult since the team was already occupied with other engineering projects. After much deliberation, it was clear that doing this project internally was almost impossible and the Client decided to identify an external partner who had the experience and expertise to do the work on hand.



Why Enventure

Enventure's Plant Engineering Consultants approached the Client to understand the business requirements and expectations from a partner. Based on this, Enventure proposed an engagement, which would be strategic in nature and build a long term partnership between the two companies. The uniqueness of Enventure's approach was obvious to the Client and they realized that the solution suggested by Enventure would ensure project effectiveness, while also making sure that the project engineering overheads would dramatically reduce.

Though the Client had various other vendor options, they chose Enventure for the following key reasons:

- Strong track record of providing Dedicated Engineering teams
- Domain expertise in Water Treatment
- Expertise in Autodesk Inventor, as well as iParts, iAssemblies & Vault
- Robust offshore Project Management capabilities
- Customer centric approach
- Time and Cost advantages offered by the India Delivery Center

The Solution

The solution provided by Enventure was to setup a dedicated team of design engineers led by a Project Manager, who would be based at the Enventure office in Bangalore, India. This team would work as a virtual extension of the Client's team, providing the required engineering support for the Master Model creation. The team would use Autodesk Inventor for the modelling and leverage the iParts & iAssemblies functionality available within Autodesk Inventor to make the models flexible and scalable.



It was mutually decided that the initial phase of the engagement would be focused on creating Master Models for the Small to Mid-capacity Package Plants family, followed by the Large Package Plants family. The team at Enventure would be required to have an in-depth understanding of the Client's Product families in order to create efficient and smart models, thus making optimum use of engineering knowledge and best practices.

The Client's team along with the Enventure team decided that adopting an approach based on configuration based models would be ideal. Based on this, the skilled team of designers at Enventure worked extensively on iParts and iAssemblies to generate configurations at part and sub assembly level. The effort involved developing complex tables to program the configuration and the team did several tweaks to eliminate anomalies identifiable at every stage.

Within a few months, Enventure was able to successfully create the first configuration based Master Model. The Parametric Model was capable of accepting user provided data, to intelligently revise drawings and BOMs, for each part and assembly. Beyond this, the Enventure Team went on to create Master Models for other product families, as well as support the Client with detailed engineering for live projects.

The Benefits

The Client could easily identify that the engagement was a success, as they were able to utilize the strategic partnership with Enventure to achieve the business goals they had set. The seamless communication between the teams helped Enventure to understand the product families comprehensively and create an accurate Parametric Model. The Client was also able to see immediate benefits in Sales and Operations, from having taken the approach of creating Master Models.



The key business benefits identified by the Client at different functional levels were:

Engineering :

- Estimate accurate pricing for bids using BOM
- Optimize engineering time for project execution
- Improve control of CAD assets

Procurement :

- Request for quotes from new vendors
- Describe their requirement with clear specifications
- Opt for vendors close to site, to optimize costs

Sales :

- Respond to RFQs very quickly, with more details than earlier
- Ensure project estimates were more accurate
- Showcase realistic designs along with BOM specifications
- Display better understanding of end user requirements
- Give the end customer a better impression of the solution

Conclusion

The engagement with Enventure was a well thought out decision made by the Client and an important strategic move to achieve business goals. Though there were apprehensions internally at the start of the relationship on whether they had made the right choice, the competence of the Enventure team soon put all their concerns to rest, as they started seeing that the team was delivering high levels of quality, while also meeting committed schedules. With the benefits realized, the Client decided that Enventure would be a long term partner they would continue to engage with.



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