

Retail Store Furniture Design for Manufacturability (DFM) Support, Europe

Case Study Highlights

Client Profile:

Furniture Manufacturing, Europe

Objective:

Improving the engineering, prototyping and manufacturing lead time for furniture designed for retail stores and expedite the delivery to customers.

Solution:

The design of one of the retail store furniture was converted from 2D to 3D for greater visibility, considering the client's Design for Manufacturing (DFM) strategy, manufacturing processes and product requirements. The engineering time was reduced from 5 days to 1 day using design automation tools which further helped in reducing

Software Used: SolidWorks, DriveWorks & AutoCAD

Challenges:

- 2D working environment leading to unnecessary human errors and rework
- Excessive time consumed in designing, prototyping and manufacturing customized furniture
- Repetitive design tasks stretching the development schedule
- Design process not aligned with the manufacturing capabilities
- Delivery process lacking quality control and affecting the customer experience

Benefits

- Engineering time Reduced from 5 days to same day completion
- 2 - 3 iterations and numerous quality checks reduced to single stage
- Design passed prototype tests at nearly 100% accuracy
- Opportunity to bring products to market faster with less effort and cost

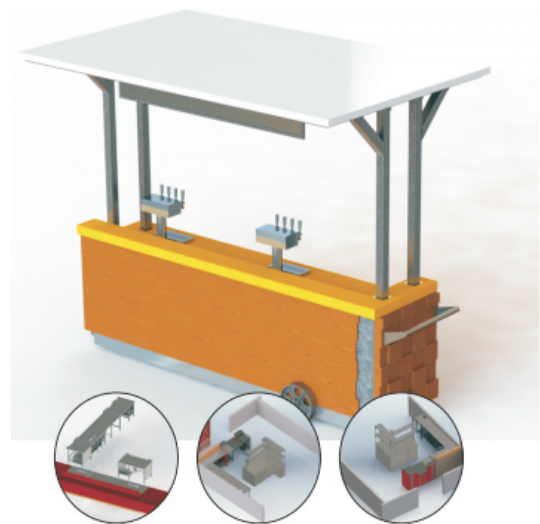


Furniture manufacturers operating in retail industry are often faced with a challenge of developing and delivering customized furniture designed for retail stores of different architecture setting. It is important for manufacturers to equip themselves with right technologies and processes, to boost up the design prototyping and manufacturing time, minimize cost and ensure timely delivery of products to end customers. While Design for Manufacturability (DFM) strategy is helpful in bringing down the development schedule and reduce material wastage, there is an increasing need of streamlining the design process as per the manufacturing capabilities.

A Europe based furniture and equipment manufacturer for retail stores collaborated with Hi-Tech to seek a similar solution to bring down lead times by improving the design and manufacturing processes and thereby deliver the products to customers faster.

The Solution

Hi-Tech performed a preliminary study on the design and manufacturing capabilities of the client through several onsite visits and developed a process to achieve the objectives. The 2D workflow was first converted to 3D to enhance the product visualization and help engineers and shop floor personnel to understand design intent clearly. Utilizing an experienced team of mechanical engineers, HiTech implemented automation in several areas of the design process aligned as per the manufacturing capabilities. The approach helped client in implementing the DFM strategy and gain benefits of reducing the manufacturing lead time while reducing the wastage. The team also provided a defect tracking and process quality checks to strengthen and boost the product delivery process.



About Mechanical 3D Modelling

Mechanical 3D Modelling is an India based company that caters for global clientele and plans to penetrate deeper into the existing and emerging markets. Proficiency lies in offering qualitative, cost effective and time bound mechanical engineering design services, including 2D, 3D CAD drafting, 3D solid modeling, FEA, CFD, rapid prototyping, reverse engineering. Professional and highly experienced team can handle all kind of CAD projects with the use of AutoCAD, Wildfire, 3D Max, Inventor, Solid Works, Solid-edges and Pro-e tools.