3DEXPERIENCE® **Works**

DFXBOT

DFXBOT PRIVATE LIMITED

SPEEDING UP DEVELOPMENT OF SMART INVENTORY MANAGEMENT SYSTEMS WITH
3DEXPERIENCE WORKS SOLUTIONS

Case Study

DFXBOT moved to **3D**EXPERIENCE Works solutions to develop larger, more complex inventory management automation designs on an integrated, cloud-based platform offering improved data management and simulation tools, all of which are helping the company accelerate design cycles, reduce prototyping, and improve quality.

DS DASSAULT SYSTEMES

Challenge:

Resolve difficulties experienced using Fusion 360 design software involving complex designs and those with multiple BOM (bill of material) items to accelerate development and improve quality.

Solution:

Implement **3D**EXPERIENCE Works mechanical design, rendering, structural simulation, data management, collaboration, and communication solutions—including **3D**EXPERIENCE SOLIDWORKS Premium, 3D Creator, 3D Sculptor, **3D**EXPERIENCE SOLIDWORKS Simulation Designer, **3D**EXPERIENCE Works Learner, Collaborative Designer for SOLIDWORKS, Collaborative Industry Innovator, Project Planner, Social Business Analyst, and 3DSwymer roles—to replace Fusion 360 solutions and accelerate development.

Results:

- Reduced design cycles by 20 to 30 percent
- Cut prototyping costs by 30 to 50 percent with simulation
- Improved quality via design optimization
- Moved to product data management (PDM) in cloud

"With **3D**EXPERIENCE Works solutions, we were not required to invest in a PDM system because our data is managed in the cloud on the **3D**EXPERIENCE platform, which lets our team members work on the same design, creating different components of the same parent assembly simultaneously without any concerns for revision control or overwritten or lost data."

– Pankaj Kumar Mahato, Director

DFXBOT Private Limited develops and manufactures intelligent inventory management systems that further automate production for manufacturing companies. Founded in 2020 with a mission of making inventory management as automated as using an ATM banking machine, the Indian company helps customers who still rely on error-prone manual work and spreadsheets for inventory counting and management to automate these processes as part of the move to Industry 4.0. By identifying and solving problems related to inventory management, DFXBOT's smart products offer a low-cost solution for real-time monitoring of inventory availability, condition, and consumption, helping manufacturers improve the visibility of their supply chains, gain transparent access to inventory data, improve equipment operational efficiency, and leverage analytical abilities for forecasting.

The company's products help manufacturing customers reduce downtime by eliminating stock audits, production line stoppages due to unanticipated inventory shortfalls, and human error in inventory counting. DFXBOT's patented SLIM product integrates sensors with internet of things (IOT) storage devices—such as pallets, bins or rates—to enable real-time, 24/7 inventory data availability. The company also customizes the size and capacity of its SLIM system to support the differing storage infrastructures and needs of its customers.

Until early 2023, DFXBOT used Autodesk Fusion 360® software for product development. However, the company's designers and engineers encountered difficulties when working with large or complex designs, as well as those with a large number of bill of materials (BOM) items, according to Director Pankaj Kumar Mahato. The company also had simulation and product data management needs, and wanted an integrated solution that would help designers and engineers accelerate design cycles, reduce prototyping, and improve quality.

After evaluating available solutions, DFXBOT chose to implement mechanical design, rendering, structural simulation, data management, collaboration, and communication solutions—including **3D**EXPERIENCE® SOLIDWORKS® Premium, 3D Creator, 3D Sculptor, **3D**EXPERIENCE SOLIDWORKS Simulation Designer,

3DEXPERIENCE Works Learner, Collaborative Designer for SOLIDWORKS, Collaborative Industry Innovator, Project Planner, Social Business Analyst, and 3DSwymer roles— from the 3DEXPERIENCE Works portfolio to replace Fusion 360 solutions and accelerate development. The product innovation portfolio leverages the cloud-based 3DEXPERIENCE platform to give customers access to the power of industry-leading tools for design, manufacturing, data management, and marketing from Dassault Systèmes.

"Our design team members had a good experience using SOLIDWORKS solutions in the past, and the 3DEXPERIENCE Works solutions give us the capabilities that we need to accelerate development and win the race to market," Mahato says.
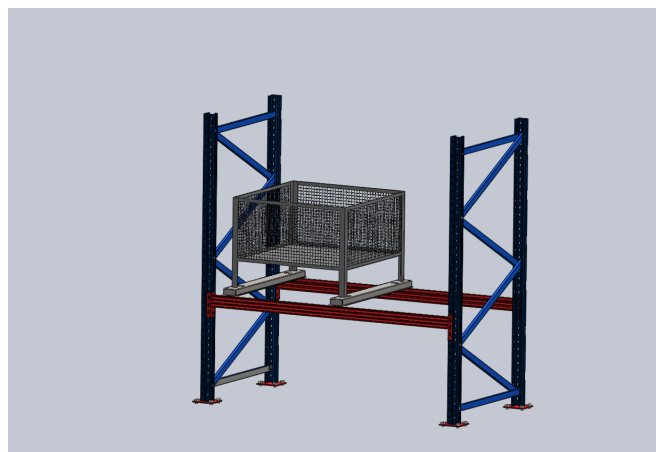
FAST DEVELOPMENT OF EQUIPMENT EFFICIENCY IMPROVEMENT SYSTEMS

By implementing 3DEXPERIENCE Works solutions, DFXBOT was able to streamline and restructure its product development processes to take advantage of the wide range of new capabilities, resulting in faster development and shorter design cycles. "Our new product development process consists of the ideation stage, concept generation, concept review, design detailing, detailed design review, prototype build, testing, validation, field trial, and design release-related activities, and the 3DEXPERIENCE platform solutions fit fully or partially with every one of these stages," Mahato explains.

"The 3DEXPERIENCE platform is helping us by enabling easy and fast CAD modeling compared to other available CAD software," Mahato adds. "Our design process on the 3DEXPERIENCE platform consumes 20 to 30 percent less time now."

REDUCING PROTOTYPING, OPTIMIZING DESIGNS

Another 3DEXPERIENCE Works solution helping DFXBOT to speed development is the Simulation Designer role. The company uses it to conduct finite element analysis (FEA) on product designs to validate

With 3DEXPERIENCE Works solutions, DFXBOT has streamlined and restructured its product development processes to take advantage of the wide range of new capabilities, resulting in faster development, shorter times to market, reduced prototyping, and new designs that are optimized for performance.

design performance, minimize expensive rounds of physical prototyping, and optimize designs to improve quality. "The 3DEXPERIENCE SOLIDWORKS Simulation Designer role enables us to conduct structural FEA simulations on our product designs with our own in-house FEA experts" Mahato notes.

"Running structural simulations helps us optimize designs to improve performance as well as ensure that our designs will pass our final lab test in one go," Mahato continues. "This simulation capability has enabled us to reduce requirements, and associated costs, for our prototype builds by 30 to 50 percent."

STREAMLINING PDM AND MAINTAINING REVISION CONTROL

The move to **3D**EXPERIENCE Works solutions has also resolved DFXBOT's data management issues when working on large, complex designs without compelling the company to incur the expense of a traditional PDM system and associated server hardware by transparently managing product design and associated data in the cloud. "With **3D**EXPERIENCE Works solutions, we were not required to invest in a PDM system because our data is managed in the cloud on the **3D**EXPERIENCE platform, which lets our team members work on the same design, creating different components of the same parent assembly simultaneously without any concerns for revision control or overwritten or lost data," Mahato points out.

"The current highly competitive state of the market requires multiple systems to be integrated and also easily accessible," Mahato stresses. "This is reflected in the innovative nature of the cloud-based **3D**EXPERIENCE platform and shows that Dassault Systèmes' commitment and focus is fully in line with its customers' requirements."

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

Dassault Systèmes, the **3D**EXPERIENCE Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 250,000 customers of all sizes in all industries in more than 140 countries. For more information, visit **www.3ds.com**.

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