

Case Study: Leading Global Wind Blade Manufacturer

ABOUT

The company is a leading global manufacturer of composite wind blades, serving global OEM customers. The company maintains advanced blade manufacturing facilities across China, Turkey, Mexico and the US. The company can cost-effectively manufacture and deliver wind blades across the entire Asia Pacific region, as well as Europe and the Americas.

THE CHALLENGE

At its China facilities, the company manufactures large wind blades, using extremely large raw material rolls of 200m in length (656 ft.). Since the blades are immense, the factory uses several fiberglass rolls to make a single blade, while each blade is composed of 700 - 1,000 pieces.

Material cost has a significant impact on the total cost of production leading the company to continuously seek ways to improve material utilization.

Additionally, cut plans are made manually, taking two to three days per new blade design, which needed to be further improved.

This manual process was prone to human errors such as overlaps, missing pieces, over cuts and alike. It was heavily dependent on the professional experience of the specific engineer assigned to the project, which in some cases led to material waste, errors and, as a consequence, production delays. The company was subject to production 'rate up - cost down' pressures and decided to make all efforts to improve material utilization and automate its production processes.



Solution Benefits

- Material savings of 3-4%
- Faster time-to-market
- Increased staff efficiency
- Automated & optimized cut plans
- Improved manufacturing yield and ROI
- Reduced waste
- Full digital part traceability



PLATAINE'S SOLUTION FOR CUT PLANS OPTIMIZATION & AUTOMATION

The company partnered with Plataine to deploy a manufacturing optimization solution that would dramatically improve their cut plans as well as their manufacturing process as a whole, while easily integrating with their existing systems.

Plataine's professional services team worked alongside the company's teams to implement the project in just two weeks as the implementation simply required the company's CAD files, material information and their business & production preferences and constraints, to fully operate.

With Plataine's solution, the company is now able to enhance all manufacturing processes, taking into account relevant production parameters in real-time, while automating and optimizing the cutting and production processes of wind blades. The company now use Plataine's solution for automated and optimized cut plans or nesting of new blades and repairs for existing blades.

Fully automating these processes has resulted in significantly faster time-to-market for new designs and repairs, eliminated associated human errors, while freeing-up skilled engineers to work on additional projects. Overall, The company achieved 3 – 4% savings in raw material in addition to shorter time-to-market.

Plataine's algorithms draw on the firm's deep expertise in Artificial Intelligence and the advanced manufacturing sector. The software's artificial intelligence (AI) capabilities help manufacturers achieve the optimal balance between material savings and production floor constraints. Plataine's solution is designed to easily integrate with any existing IT system, enabling rapid deployment and quick return-on-investment for wind blade manufacturers.

"We were looking to reduce material waste and speed up response time and time to market for new designs and repairs. Partnering with Plataine allowed us to achieve our goals in record time. Plataine's Manufacturing Optimization solution provides us with significant material and time savings and offers fast return on investment."

– Chief Technology Officer

ABOUT PLATAINE: Plataine is the leading provider of Industrial IoT and AI-based optimization solutions for advanced manufacturing. Plataine's solutions provide intelligent, connected Digital Assistants for production floor management and staff, empowering manufacturers to make optimized decisions in real-time, every time. Plataine's patent-protected technologies are used by leading manufacturers worldwide, including Airbus, GE, Renault F1® Team, Stelia North America, Muskogee Technology, IAI, Triumph, General Atomics, TPI Composites and Ethan Allen. Plataine partners with Siemens PLM, McKinsey & Company, VIRTEK, the AMRC with Boeing, and CTC GmbH (an Airbus Company), and is also a part of the National Composites Centre (NCC) membership network, to advance the 'Factory of the Future' worldwide. For this work, Plataine has received a Leadership Award from Frost & Sullivan and Innovation Awards from the JEC and CompositesUK organizations, as well as the Shanghai Society of Aeronautics (SSA). Plataine is ISO 27001 certified for compliance with information security management requirements. For more information, visit: www.plataine.com.