

Global wind turbine leader, Vestas turns to digitalized data to help usher in the next generation of sustainable energy



- Vestas is building next-generation, eco-friendly solutions, ensuring a more sustainable future
- Leveraging PTC's Operator Advisor all manufacturing instructions are now available via easy to digest visual directions, reducing dependency on paper-based manuals
- Vestas improves first time build rate and better-quality outcomes for products that include thousands of components needing precise assembly

Installing more than 17% of the global wind capacity, Vestas has been at the forefront of wind energy for 40 years, introducing market-leading wind energy solutions that have driven the down cost of energy and taken wind energy from niche to mainstream. With more than 23,000 employees, industry-leading smart data capabilities, and an unparalleled number of wind turbines in service, Vestas is driving the future of sustainable energy solutions.

The Challenge

Building some of the most complex and in-demand offerings in today's eco-friendly world, Vestas was looking to improve a manufacturing process that requires numerous shop floor workers to put together thousands of materials in a critical step-by-step process. With a build process that is so dynamic, their machines require very detailed work instructions that had been traditionally printed on hundreds of pages of paper. An industry visionary, Vestas also frequently adds the latest technologies into their products, meaning that initial work instructions have to be updated to meet the latest specifications and best practices each time there is an upgrade or an engineering change.

Currently, as part of the product planning team's role, workers have to visit each shop and check that every workflow has the latest information – creating a lengthy review process and unnecessary travel costs. Adding to this, the archaic process required workers to manually sift through numerous pages of instructions that may

not be relevant to their specific job function, further stifling productivity. Also, as with many organizations in the manufacturing space, some of the company's most experienced workers are nearing retirement age and possess a wealth of knowledge that needs to be captured and archived. All in all, Vestas knew that the methods in place were not sustainable in today's ultra-competitive smart manufacturing world and decided to kick off a search to find a partner who could help them improve these workflows.

The Approach

During their search for Industry 4.0 technology, it became clear that the company needed to take a digital-first approach to their manufacturing and reduce their reliance on paper-based instructions. To do so, Vestas is adopting an entirely digital turbine production process – everything from CAD design to manufacturing. The company turned to PTC's ThingWorx Operator Advisor, which equips machine operators with the relevant information they need to identify and complete tasks – including role-specific digital work order information and



instructions with rich CAD drawings and videos – all in a single interface.

The Results

Because of the pre-built, configurable building blocks provided through the ThingWorx platform, the full deployment of Operator Advisor – from conceptualization to hitting the factory floor – will take Vestas less than half of the time if the company was looking to roll out an in-house solution. The company is also hoping that with the build instructions not having to be printed out, it will help remove a large amount of the work of that the product planning team is currently doing.

Introducing a technology that provides a multitude of workforce enhancement capabilities to a labor-intensive production ensures Vestas' manufacturing floor employees will have access to all of the information needed to complete their job, digitally and in real-time. This will help ease the impacts felt by the veteran employees retiring and combat the current volatility that the manufacturing space is facing around employee retention. Additionally, this will have far-reaching impacts on things like safety and reductions in training times as the technology will not only provide the floor worker with the task at hand, but the best way to complete it.



ThingWorx Operator Advisor has transformed the way we deliver information to our employees on the shop floor. We've gone from providing text-based instructions via paper manuals, to delivering work instructions with the 3D CAD files from PLM. The information is now delivered in context, letting employees focus on the task at hand, rather than digging around the various IT and OT systems for the right information."

Mark Jaxion
Senior Strategy Specialist Lead of IoT and Industry 4.0, Vestas

Next Steps

Vestas and PTC's partnership will continue to pay dividends as the company plans for the

next generation of smart manufacturing technologies, as only PTC provided the operational data display through digital, 3D, video, and augmented reality that they were looking for. With this technology in place, Vestas believes they are set up for success in a factory of the future, with a road map of how they can easily integrate this data with other smart tools and even robots.

Furthermore, and true to its culture, Vestas is also looking to build a sustainable solution on their shop floor by minimizing its ecological footprint through Operator Advisor. The hope is that the technology will also allow the company to remove print and copy machines and countless boxes of paper from all manufacturing sites.

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