INVISTA Uses AWS IoT TwinMaker and Matterport to Transform Production

Executive Summary

INVISTA, an industry leader in the Nylon 6,6 and polypropylene value chains, wanted to retain the institutional knowledge of employees transitioning to retirement. Collaborating with AWS Partner and leading spatial data company, Matterport, INVISTA developed digital twins of its manufacturing facilities using the AWS IoT TwinMaker and Matterport integration. Not only did this help INVISTA retain employee knowledge, but it also widened knowledge access across the organization, and in turn, broadened the skillsets of employees. This has since led to major organization-wide gains, including a drastic reduction in downtime and operational costs.

Knowledge is Power

With long-time employees due to retire, INVISTA was facing a significant loss of experience on the shop floor. As Dane Laughlin, director, advanced learning capabilities at INVISTA said, “We stood to lose years’ worth of institutional wisdom.”

INVISTA also wanted employees to have a solution where they could access the knowledge they needed when they needed it. Laughlin explained the connected worker vision that the company had, “The idea is to coalesce people, tools and the data they need in order to improve operational efficiency.” By making the right information easily accessible, INVISTA would be able to drive operational efficiencies.

About Customer

INVISTA is an industry leader in the Nylon 6,6 and polypropylene value chains. It has also been a global leader in the development of N_2O abatement technology for more than two decades.

AWS Services Used

- AWS IoT TwinMaker
- Amazon EC2
- Amazon ECS

Benefits

- Reduced downtime significantly with rapid data search
- Widened knowledge access
- Improved overall production costs

Seeing the Big Picture with 3D Visual Clarity Transforms Operations for INVISTA

INVISTA decided to develop digital twins in which employees could look at virtual replicas of shop floors and find information about production processes. It worked with Matterport to capture its production facilities in photo-realistic 3D to gain access to critical building intelligence. Those 3D visualizations are surfaced with AWS IoT TwinMaker to serve up contextual insights to shop floor employees. This not only empowers employees to troubleshoot issues independently and rapidly by finding answers to issues on the digital twin, but also allows them to collaboratively add their own knowledge to it.

INVISTA now has a live, employee-crowdsourced knowledge base built on Matterport and Amazon Web Services (AWS) that is constantly growing. Since Matterport already uses Amazon Elastic Compute Cloud (Amazon EC2), and Amazon Elastic Container Service (Amazon ECS), the integration with AWS IoT TwinMaker is seamless.

Grant Johnson, operations transformation project manager at INVISTA, explained how its integrated solution works, "It pulls data from disparate sources—from IoT sensors to work orders in SAP—into a database, which is paired to Matterport visualizations. When we migrate this into the AWS IoT TwinMaker, it makes sense of all the data, and finally, a custom-built frontend allows employees on the shop floor to use the solution seamlessly."

Rapid Data Search Reduces Downtime from Hours to Seconds

Being able to locate the right data rapidly has drastically dropped unexpected downtime for INVISTA. Johnson explained, "The faster you can find the data you need, the faster you can get operations up and running again." Now that every employee can find answers to their issues independently and contribute to a growing knowledge base, INVISTA is better prepared for anticipated retirements.

"The idea is to coalesce people, tools and the data they need in order to improve operational efficiency."

Dane Laughlin

Director, Advanced Learning Capabilities, INVISTA

Big Cost Savings in the Final Analysis

The process engineers at INVISTA now save hours on root cause analysis because they don't need to go out into the field every time. "Thanks to Matterport, our experts can use AWS IoT TwinMaker to troubleshoot remotely—improving operational response time," explained Laughlin.

An Intelligent Future

In the future, INVISTA is looking to unite many different technology elements it uses—digital twin, augmented reality, virtual reality, and generative artificial intelligence—to create a cohesive ecosystem. This will enable a smarter factory with more manufacturing efficiencies, and even better quality control.

"Thanks to Matterport, our experts can use AWS IoT TwinMaker to troubleshoot remotely—improving operational response time."

Dane Laughlin

Director, Advanced Learning Capabilities, INVISTA

About partner

Matterport is a leading spatial data company focused on digitizing and indexing the built world. Its all-in-one 3D spatial data platform enables anyone to turn a space into an accurate and immersive digital twin that can be used to design, build, operate, promote, and understand any space. The Matterport platform helps thousands of businesses across more than 177 countries to realize unforeseen efficiencies.