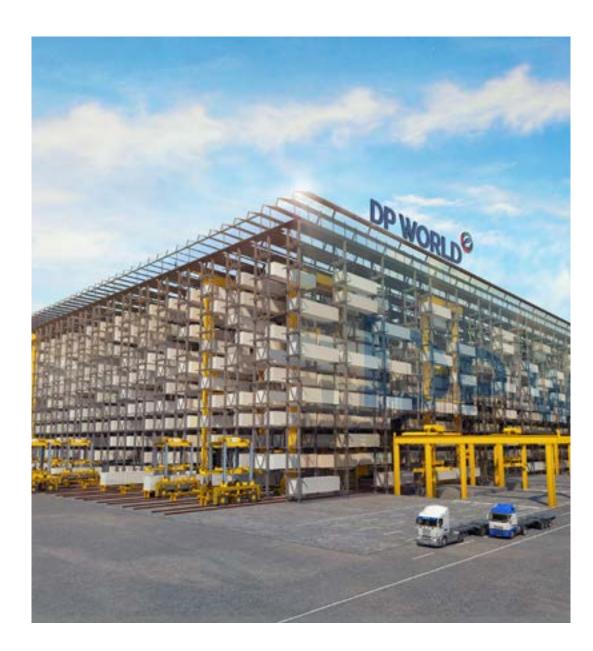# A data-driven journey to better asset management

DP World uses asset health insights from IBM Maximo software to improve operations

by Deirdre Puleo

7-minute read

At the Jebel Ali Port, 35 kilometers southwest of Dubai, a tugboat nudges a 400-meter-long cargo ship carrying nearly 20,000 40-foot intermodal containers into a terminal.

Waterside quay cranes weighing 2,000 tons and standing 450 feet high hoist the containers from the ship and place them on shore. Dozens of terminal tractors then transport the containers to automated stacking cranes for storage or to BoxBay, a new state-of-the-art system that stores containers in steel racks up to 11 stories high. Here, the containers sit until external

customers or trucking companies pick them up.

At DP World, this intricate dance between cargo and equipment is business as usual. In 2020, the global logistics business and supply chain solutions provider handled an astounding 71.2 million shipping containers for brand giants such as Ikea and Nissan. But for Jan Cuppens, DP World's Vice President Global Engineering, it's all in day's work: "In the end, we want to bring cargo or a container as efficiently as possible from point A to point B, and make it as simple and smooth for the customer."

To run simply and smoothly, DP World must operate like a well-oiled global machine. This means having standardized processes and reliable data across the organization, related to equipment, jobs, project management and more. It's a tall order; DP World

DP World handled

71.2

million shipping containers in 2020

IBM Maximo
software will run in

55

marine terminals

operates in 64 countries including 55 marine terminals worldwide. Part of that growth comes from acquiring a slew of additional terminals in 2005, transforming DP World from a local operator to a global logistics giant virtually overnight.

But the new terminals came with their own legacy systems and operational challenges, according to Mr. Cuppens. "Each terminal had its own way of operating, its own processes, and different finance, maintenance and engineering systems. We weren't getting any consistent data out of the systems and many of the processes were different in different terminals. There were no global standards."

He continues: "So we got the agreement to go to one system for engineering management globally and standardize our processes."

"If you don't have any data to work with, if you have the wrong processes, you have no idea where to start improving."

Jan Cuppens, Vice President Global Engineering, DP World

Standardizing processes across all terminals

After researching many solutions, DP World chose IBM® Maximo® Application Suite technology running on IBM Cloud®. The solution captures data directly from the company's vast assortment of assets, such as cranes and tractors. Coupled with new standardized codes and processes, the data provides unprecedented insights into machine downtime, repair and maintenance costs, business operations and other KPIs.

"The difference in the availability and transparency of the data is massive," says Suresh Kumar, Manager of Global Engineering Business Applications at DP World. "For instance, an important KPI is overall equipment effectiveness. So if

a machine's motor is idling, we know; we use those metrics to take action. We can also do analysis and coordinate our equipment and maintenance schedules to avoid breakdowns. That is where we're going."

To support its vision of implementing IBM Maximo software across all of its terminals globally, DP World engaged with IBM Business Partner Envision Middle East Solutions, a leading solutions provider with competency and domain knowledge in the ports, terminals, warehouse and logistics industries. "We needed scalability, global reach and flexibility in understanding our needs, something that was clearly shown during the pandemic," adds Mr. Cuppens.

The engagement focused on developing standardized processes for asset hierarchy, configuration, item definitions, job plans, project management schedules and failure mode analysis eventually for each of the company's 55 terminals.

Envision came up with a response to build a standard deployment template with terminal-specific, local configurations and integrations to both internal and external systems such as fuel management, supervisory control and data acquisition (SCADA) and ERP systems. It was also instrumental in executing DP World's vision of having a single Maximo technology on IBM Cloud instance integrated with the Oracle Fusion platform.

"We want to become a proactive organization based on the data we get out of our systems."

Jan Cuppens, Vice President Global Engineering, DP World

Data that leads to strategic action

DP World's Maximo technology platform on IBM Cloud continues to mature, but already the quality of data has increased significantly. The data also feeds into DP World's reliability program, which aims at working more efficiently, reducing waste and avoiding equipment failures when customers are being served.

"If a vessel is alongside and we are handling it with four quay cranes for 24 hours or 36 hours, nothing should break down," says Mr. Kumar. "To do that, everything needs to be based on process and data. If you don't have any data to work with, if you have the wrong processes, you have no idea where to start improving."

With insight comes action. Standardized failure codes, work orders and action codes help improve efficiencies for engineering managers who work with the equipment on a daily basis. Mr. Cuppens explains: "If the data out shows the top 10 faults, we can do active engineering instead of reactive engineering. We want to become a proactive organization based on the data we get out of our systems."

The data from the Maximo platform on IBM Cloud also provides insight into repair and maintenance costs. In the past, engineering cost reports didn't match those in the financial reports.

Now the information is consistent. "If the information is in Maximo cloud, it is the same in the financial system," concludes Mr. Kumar. "This lets us compare terminals of similar operation modes. We can ask, 'Why is this one more expensive than that one? Are the machines older?' With the correct data we find out what's happening."

Since starting the program in 2018, DP World has rolled out Maximo Application Suite technology platform on IBM Cloud to more than 12 terminals. The company plans to complete six more terminals by the end of 2021 and finalize the journey by end of 2022.

About DP World

Based in Dubai, United Arab Emirates, DP World (external link) is a leading provider of worldwide, smart, end-to-end supply chain logistics, enabling the flow of trade across the globe. Its comprehensive range of products and services covers every link of the integrated supply chain—from maritime and inland terminals to marine services and industrial parks as well as technology-driven customer solutions.

About Envision Enterprise Solutions Pvt. Ltd.

IBM Business Partner Envision (external link) founded in 2006, is a leading IBM Maximo integrator and solutions provider with offices in the US, Canada, Singapore, India and the United Arab Emirates. In addition to specializing in enterprise application, planning and optimization technologies, the company provides innovative solutions in the areas of data sciences, IoT, embedded systems and more.

Solution components

- IBM Cloud®
- IBM® Maximo® Application Suite