

DP World Southampton takes a proactive approach to maintenance with IBM Tivoli Maximo Asset Management



Overview

■ Business Challenge

DP World Southampton operates a sophisticated network of cranes, straddle carriers and auxiliary equipment which it uses to load and unload containers from ships and service lorries. Equipment breakdowns can cause massive problems, delaying goods in transit and incurring heavy maintenance and repair costs. The company wanted to find a way to improve maintenance performance, increase efficiency and reduce operating costs.

■ Solution

SRO Solutions (www.srosolutions.net), an IBM Business Partner, helped the company deploy and configure IBM Tivoli Maximo Asset Management, giving Engineering Technicians in the workshops direct access to maintenance systems for the first time, and enabling integrated management of procurement and inventory. DP World Southampton is also planning to introduce real-time access to the system via handheld devices.

■ Key Benefits

- Engineering Technicians are able to diagnose problems more effectively and take preventative measures to help prevent breakdowns.
- The company is performing 10 percent more preventative maintenance and suffering 10 percent fewer actual breakdowns.
- Workflow-based process management helps enable tighter control of maintenance scheduling and costs.
- Full traceability and advanced reporting functions help simplify regulatory compliance.



Solving problems before they occur with proactive maintenance

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DP World Southampton, a joint venture between DP World and Associated British Ports, operates the second-largest container terminal in the UK. Founded in 1985, the facility has grown to cover a site of more than 200 acres (81,000 sq. m), with four deep water berths, one short-sea berth, 14 ship-to-shore gantry cranes, one mobile harbour crane and over 100 straddle carriers to load and unload the containers to and from ships and onto trucks and trains. Two large workshops handle maintenance for these crucial assets. The terminal employs over 780 people, and has an annual capacity of over two million TEU (Twenty Foot Equivalent Units).

“The containers we process bring cargo from all over the world,” comments David Bowers, Engineering Planning and Quality Manager at DP World Southampton. “They can hold anything from expensive consumer goods to frozen foods or hazardous chemicals, so we need to be able to store each shipment appropriately, securely and safely, as well as ensuring that it is loaded for delivery on time. To meet all these demands we need to manage and maintain thousands of different assets, from the largest super post-panamax gantry cranes down to the spare parts required by berth vehicles.”

Room for improvement

For several years, DP World Southampton had been relying on a legacy computerised maintenance management system (CMMS), which was not well adapted to the company’s business processes.

“The old CMMS wasn’t a bad solution in itself, but it had never been properly configured to meet our needs,” says David Bowers. “As a result, we found it difficult to manage our maintenance workload intelligently. We wanted to ensure that we were servicing our equipment often enough to meet our ISO 9001:2000 quality standards and to comply with health and safety regulations, but not so often as to create unnecessary work.

“Equally, we found that 80 percent of our maintenance work was aimed at fixing breakdowns, rather than preventing them. Every time a crane breaks down, it slows our throughput and ultimately costs us money. We realised that if we could find a way to be more proactive in our maintenance work, we could keep the terminal fully operational for longer periods – reducing delays and boosting efficiencies.”

Reengineering maintenance management

The company decided to re-think its whole approach to maintenance. The first step was to create a team that would oversee the implementation and ongoing optimisation of a new CMMS that would align more closely with the unique operational needs of the business.

“Based on the experiences of other companies in our industry, we soon created a shortlist of possible solutions that could form the backbone of the new CMMS,” says David Bowers. “We had a very exacting list of requirements, and IBM Tivoli Maximo Asset Management was one of the few products on the market flexible enough to meet all our needs.”

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David Bowers
Engineering Planning and Quality Manager
DP World Southampton

Finding a partner

The maintenance management team approached IBM to find a partner capable of helping the company analyse its business processes and implement and configure the solution to deliver maximum efficiency. IBM recommended SRO Solutions, an IBM Business Partner and one of the UK's leading specialists in Tivoli Maximo technologies.

"We were very impressed with the consultants from SRO," comments David Bowers. "It was immediately clear that they had the technical skills for the project. More importantly, they also had a great deal of experience of working with marine engineering and shipping companies, so there was an immediate awareness of the types of challenges we were facing and best practices for dealing with them. We were also glad to have support from a team based in the UK, so we could get people on-site quickly when required."

Matching IT to business processes

SRO worked closely with the in-house team to analyse the company's maintenance, finance, procurement, inventory and logistics processes. The next step was to create documentation, and then deploy and configure the Tivoli Maximo Asset Management software.

"The real difference with Tivoli Maximo is its flexibility and configurability," explains David Bowers. "With a dedicated maintenance management team in-house, and expert support from SRO, we will be able to keep improving our maintenance processes and adapt to changing conditions."

Tivoli Maximo has been set up to help manage both the maintenance processes themselves, and associates processes like procurement and inventory management for spare parts and equipment. Spare parts in the stores are bar-coded and scanned directly into the system, so DP World Southampton can see when supplies are running low and need to be reordered.

Broader access to technology

For the first time, Engineering Technicians in the terminal's workshops have been given direct access to CMMS data. New PCs installed in the workshops enable them to use the Tivoli Maximo Asset Management system via a simple Web browser interface, providing a wealth of useful information that helps them to diagnose potential problems before they occur.

"What we're aiming to achieve with Maximo is a move from a 'break-fix' maintenance model towards a more preventative approach," says David Bowers. "As an example, here's a common scenario: one of our straddle carriers comes in for unscheduled maintenance after a breakdown. The Engineering Technicians rectify the problem but notice an additional defect that will need attention in the future. Rather than feedback verbally the Engineering Technicians can now raise remedial work orders in Maximo to report the defects. Supervisors review the feedback, prioritise and schedule the work to be completed as soon as possible or when the next planned maintenance is carried out.

"Tivoli Maximo enables a more proactive approach to maintenance: we have already achieved a 10 percent reduction in breakdown-related work and a corresponding increase in preventative maintenance – helping to keep our assets in working order and deliver a rapid, reliable service to our customers."

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Engineering Planning and Quality Manager
DP World Southampton

Smarter Maintenance

DP World Southampton is moving away from 'break-fix' maintenance and toward a proactive, preventive model by enabling Engineering Technicians to interact directly with a computerised maintenance management system (CMMS) and review the complete service history of each piece of equipment that is being maintained – helping them to diagnose potential problems and schedule remedial maintenance work to resolve issues before they occur.

“The result? Breakdowns are avoided, and we can keep the straddle carrier fully operational until the next planned maintenance session. We don’t have to wait for something to go wrong before we take action – the Maximo solution gives our Engineering Technicians the tools they need to record, plan and fix problems before they happen.”

The Engineering Technicians now log their maintenance reports directly into the system as they work, so there is less risk of a job being forgotten or entered incorrectly. As well as minimising mistakes, this also helps to improve traceability – helping with audits, inspections and regulatory compliance.

“We have a strict workflow now that governs all planned maintenance,” adds David Bowers. “Each job starts out with a Maximo work order – and you need an order number to get spare parts. This makes it much easier for us to keep track of inventory and ensure that the right parts are used for the right jobs.”

Looking to the future

The in-house team is currently planning to extend its use of the Tivoli Maximo solution even further by introducing real-time access via handheld mobile devices.

“Mobile access will be a tremendous advantage, especially for on-site maintenance jobs,” comments David Bowers. “A lot of our work happens outside the workshops, in places where it’s impossible to install PCs. If we can schedule jobs and receive updates from our Engineering Technicians in real time, it should deliver a significant boost to productivity.”

The team is also developing a comprehensive hierarchy of ‘failure codes’ – unique identifiers for specific faults in different types of equipment. When this is in place, DP World Southampton will be able to use Maximo to analyse the frequency of each type of fault, and set policies to minimise their occurrence. For example, if a certain class of assets is generating a large number of identical failure codes, the team might decide that these assets should be inspected more often, or that the affected components should be replaced more frequently to avoid breakdowns.

David Bowers concludes: “IBM Tivoli Maximo Asset Management is at the heart of our new maintenance management processes – helping our Engineering Technicians to work more effectively, our management teams to make better decisions, and our company to cut costs and simplify compliance. Tivoli Maximo enables a more proactive approach to maintenance: we have already achieved a 10 percent reduction in breakdown-related work and a corresponding increase in planned maintenance – helping to keep our assets in working order and deliver a rapid, reliable service to our customers.”



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