



CERTUS

Port Taranaki improves maintenance practices with IBM Maximo

Implementing IBM Maximo asset management did not simply automate Port Taranaki's preventive maintenance routines. Maximo's integration capabilities enabled several fundamental business processes to be embedded in the system, improving visibility of both land- and marine-based asset costs.

The new computerised maintenance management system (CMMS) has wrought significant change. Deployed from management level through to front line staff, it has removed the need for manual, paper-based practices. By integrating with its Oracle FMIS and a bespoke labour/plant usage system, the port has gained efficiency across its whole business and moved from reactive maintenance towards more cost effective, proactive practices.

Initially, the port was looking to migrate its marine division away from its legacy system but, as Information Systems manager Mark Brennan explains, the company soon realised it could improve maintenance practices across its land-based assets as well.

"The original driver was to replace the ageing DOS-based system managing our floating plant. But once we looked at how assets were managed in other areas of the company, we decided to replace the paper-based management system we were using for our land-based assets, and move our entire preventive maintenance structure towards a much more proactive regime."

A paper problem

Prior to the introduction of IBM Maximo, Brennan says Port Taranaki struggled to accurately monitor its plant maintenance procedures.

"The system we had for our land-based assets – such as cranes and forklifts – was very reactive. If something went wrong we would fix it. But we didn't have any effective way of storing information about the asset – why it had broken down or how it had been fixed.

"A computerised system allows us to build a record of previous interactions with a piece of plant. This helps streamline repair work and enables us to plan and build maintenance regimes into the future, in order to prevent any sudden failures."

The distributed nature of Port Taranaki's existing paper-based system was also a problem. Because the port operates 24/7 and is spread across different areas, Brennan says it was difficult to follow the progress of a work order.

"The advantage of IBM Maximo was that it had everything pre-built and it could be adjusted to meet our requirements."

Mark Brennan
Information Systems Manager
Port Taranaki



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“If something on a tug was broken and required one of our land-based maintenance people to repair it, a hand-written request would be sent off. But tracking that and ensuring it ended up in the correct person’s hand in a timely way was very difficult.”

Defining a solution

With the aim of gaining better efficiency and control over preventive maintenance, and reducing expenditure in the process, a thorough CMMS selection process was undertaken.

“We wanted to find the most appropriate solution based on a cost and requirements analysis,” says Brennan. “We shortlisted a number of solutions, but chose Maximo and Certus because we got a good level of comfort about the breadth of the system’s functionality, and we knew Certus had the skills and experience to implement it.”

As the project took shape, the port realised it was a bigger undertaking than originally anticipated. The system had to accommodate other parts of the business that also interacted with assets – most significantly, the finance department.

“The decision to deploy our procurement function through Maximo meant a great deal of effort had to be put into the approvals process. Finance wanted a high degree of control built into the workflow that governed the ‘delegated authority to spend’ functionality.”

Understanding how various departments viewed an asset was revealing, says Brennan. “From a finance point of view, a tug is one financial asset, but from an asset control perspective it is more complex. In a CMMS that tug is made up of over 3000 individual maintenance components.

“In addition, we had to accommodate the corporate side of the business which looked at assets from a valuation and insurance viewpoint. We had to find and configure a solution that could handle these different perspectives.

“Some of the products we investigated didn’t have any local sites, or the technology was either too old or still in development. The advantage of Maximo was that it had everything pre-built and it could be adjusted to meet our requirements.”

Having made the vendor selection, Brennan says the solution design evolved iteratively.

“As the business learned more about the capabilities of the system and what business processes we wanted it to manage, we adjusted our requirements so we could better achieve them with the product.”

Port Taranaki shifted inventory and procurement functions wholly into Maximo. The strength of the system’s supply chain processes meant these functions could be moved with no risk to financial controls, including approvals and reconciliation processes that support financial integrity.

“We successfully emulated our complex hierarchy of approvals in Maximo, including the routing of purchase orders and automated delegation where approvers are absent.”

Says Brennan: “The more we learned about Maximo the more we felt comfortable about moving these processes into the system. In the end, the workflows we created in the product enabling us to process these financial requirements were a substantial component of the configuration of the product.”

Change management challenges

IBM Maximo’s procurement functionality was relevant to most business users, and the port could see significant benefits in introducing Maximo across the entire organisation all at once. But this raised real change management challenges.

“We streamlined the user interface and altered some of the business processes to alleviate the day-to-day pressure on our key operators.”

Mark Brennan
Information Systems Manager
Port Taranaki

“While many of the staff were able to cope with paper, when confronted with a computer screen that listed all the preventive maintenance tasks that needed doing, it became quite overwhelming.”

The port needed to get people up to speed with the look and feel of the system, while at the same time coming to grips with new business processes.

“Introducing new business rules is one thing – how they are interpreted by people on the ground is another,” says Brennan. “The new system had a big impact on some people’s tasks, particularly the work supervisor. Where, previously, he had discrete piles of paper outlining work that needed to be done on marine, cargo operations, cranes, etc, now he had one big list of jobs on a computer screen. That was very daunting.

“Happily, Certus helped us modify the way Maximo operated. We streamlined the user interface and altered some of the business processes to alleviate the day-to-day pressure on our key operators.”

The benefits explained

Natalie Souness, Port Taranaki’s asset management system coordinator, says Maximo has helped bring together all the necessary actions involved in undertaking maintenance.

“Previously our mechanics didn’t know what parts were available in the main store and ordering was completely separate from the maintenance system. They had no idea when a part would arrive, and that caused a lot of downtime. A request for a fix would be entered on paper, but there would be no visibility as to whether the job was actually in the system.”

Now, Souness says, if something needs fixing a request is created and “you can track that as it becomes a work order, see it assigned to a mechanic and see the date scheduled for the repair”.

She says the mechanics have all the items required for a job loaded against the preventive maintenance records in the system.

“A lot of our machines have 500 hour checks built into their maintenance plan. Maximo automatically triggers off work orders, and the necessary parts are ordered once the target hours have been reached. The preventive maintenance records will also detail the process to be followed to service the equipment for that particular check – such as replacing filters, checking oil and equipment parts.”

These improvements are already translating into benefits for the organisation. Marine engineer Grant Squire, who worked closely with Brennan on the project, says he is finding he has a much better picture of work that’s in progress and coming up.

“One of the biggest things is that preventive maintenance is working smoothly because we now have good inventory and purchasing integration, which makes life a lot easier. The guys on vessels can manage work knowing they have the necessary parts — it’s all dealt with for them.”

Time and money is being saved on the handling of stock items, Brennan explains.

“When these items are needed they are automatically included in the work order, their purchase is approved and the item is obtained. We no longer have people writing out manual requisitions and going through a convoluted approval process.”

Once a stock item is used, the system automatically generates a re-order. Brennan says this reduces lead time and means things are only paid for when they are needed. He says the system is providing more transparency around key maintenance processes and user acceptance is growing strongly.

“This type of implementation required people with experience and a diverse range of skills. Certus had consultants that understood the key accounting and financial principles required to integrate the product with our Oracle system, and they also had a depth of expertise around Maximo that allowed us to achieve the asset management objectives we wanted.”

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Information Systems Manager
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“We are starting to reap the benefits. Staff are extracting information relating to past work orders and using it to help solve their current assignment. The fact that all staff, whether they are management or on the ground, can query the system to find out the status of particular work, is aiding productivity and helping smooth maintenance execution.”

Brennan says the visibility of full maintenance costs is providing valuable information to the company. When a job has finished the port can now accurately see what materials were used, how much they cost and how much time was booked to the job.

“We now have an audit trail, compared to before when we didn’t really have a good grasp of the particulars involved in undertaking the work.

“Maximo allows us to drill down and see what the cost is to repair a pump on a tug, for example, and thanks to the integration with financials this item cost is now accurately reflected in the ledger.”

“Preventive maintenance is working smoothly because we now have good inventory and purchasing integration... The guys on vessels can manage work knowing they have the necessary parts — it’s all dealt with for them.”

Grant Squire
Marine Engineer
Port Taranaki

Innovation and Expertise

Its keenness to take on new technology has enabled Port Taranaki to meet its key project objectives. It adopted many of the advanced features of IBM Maximo, including workflow processing, reporting and automated integration, and it was the first customer in New Zealand to upgrade to Version 7 of the product.

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About Port Taranaki

Port Taranaki is the only deep water port on the west coast of New Zealand, and is owned by the Taranaki Regional Council. The port handles a wide range of coastal and international cargoes, mostly relating to the farming, engineering and petrochemical industries.

About Certus

Certus is Australasia’s largest specialist IBM software and infrastructure services company, with around 160 highly skilled professionals in seven city centres, supporting Tivoli, WebSphere, Information Management, Lotus and Rational. Certus’ 500 customers include some of the largest IBM users in Australia and New Zealand.

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Certus Solutions
www.certussolutions.com
info@certussolutions.com

Australia
1300 658 720
New Zealand
0800 CERTUS

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