Thiess Pty. Ltd. automates preventive and predictive maintenance at hospital

Integrating IBM Tivoli and IBM Maximo software helps company manage complex assets

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Smart is...

Analyzing facility and asset performance data to institute proactive and preventive maintenance processes and support continuous service delivery improvement even as new facilities are brought online

Downtime is not an option for one of Australasia's largest hospitals. However, facility and asset management processes were largely reactionary, increasing unplanned repair and maintenance. Thiess, a facilities services contractor, adopted a proactive stance toward Royal North Shore Hospital's (RNSH) asset maintenance program when faced with the challenges of a multiyear renovation project. By implementing a comprehensive asset management approach with IBM Maximo and IBM Tivoli Netcool/ OMNIbus software at its core, the company helps keep medical operations running smoothly and disruptions minimized while construction continues in the background.

Smarter asset management: Ensuring asset availability through analytics

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Thiess is a provider of integrated water, energy, environmental and infrastructure management services to public and private sector customers. The company offers facilities management and asset management services to healthcare, mining and industrial clients throughout Australasia. Founded in 1934, Thiess is an independent subsidiary of parent company Leighton Holdings, a leading global construction, mining and services contractor.

Supporting mission-critical assets and facilities

In 2008, Thiess entered a 28-year contract with Royal North Shore Hospital (RNSH), one of Sydney's busiest medical facilities, to provide hard facilities management services. RNSH serves four large Sydney suburbs and is one of the major trauma centers for New South Wales (NSW).

As a hospital serving tens of thousands of patients every year, there is no allowance for downtime. Hospital systems need to work 24 hours a day, every day, or lives could be at risk. RNSH managed those systems internally for years until Thiess took over.

Just as Thiess assumed these responsibilities, RNSH began a multiyear, USD700 million redevelopment project to modernize 53 outdated buildings on its campus to meet Sydney's future healthcare needs. Thiess wanted to implement a stable and comprehensive asset management platform that was responsive to the large and active healthcare facility's needs, enabling quick resolution of building equipment and component failures to ensure that patient needs remained top priority during construction and remodeling.

Business benefits

- Reduces asset management costs by USD30,000 per day

- Cuts unplanned maintenance costs by 80 percent

- Facilitates the transition from a reactive to a preventive maintenance model at RNSH

Controlling a dynamic environment

"We knew from the outset that we needed a cutting-edge system that would, at any point in time, provide accurate insight of all enterprise assets, including their condition and maintenance work processes, allowing for seamless planning and rigorous control," says Thuy Lam, business applications manager at Thiess. "IBM Maximo specifically caters to these sorts of dilemmas, and its user-friendly interface ensures that all maintenance personnel can pick up changes in real time."

Mr. Lam also emphasizes that those IBM® Maximo® Asset Management software capabilities, along with Thiess' significant experience in configuring, implementing and using Maximo software for its customers, were a key reason the company won the RNSH contract. "The biggest advantage of Maximo is that it is built for fluidity and flexibility, allowing multiple changes. We tailored Maximo to meet the specific needs of RNSH, and the solution we implemented is under constant review. Updates occur as the program learns more about the assets we manage and the specific information required to improve the facility's uptime and service delivery."

Preventive and predictive maintenance

Four building management systems (BMSs) at RNSH send 5,000 alarms a day to Thiess, which uses IBM Tivoli® Netcool®/OMNIbus software to interrogate the BMSs and automatically integrate that data into Maximo software. Using the business rules Thiess created for RNSH, the Maximo software then generates and prioritizes work orders.

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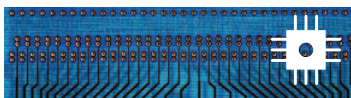
Instrumented   Each hospital asset is monitored individually or as a component of a larger asset, with alarms captured and prioritized instantly and notifications generated automatically.

Interconnected   Data from up to 20,000 daily alerts is collected and analyzed within established business rules and key performance indicators and shared with other systems and entities.

Intelligent   Automated capture of predictive maintenance data provides unheard-of visibility into asset performance, and an iterative learning process facilitates continuous system refinement.

Solution components

Software
- IBM® Maximo® Asset Management
- IBM Maximo Everyplace®
- IBM Tivoli® Netcool®/OMNIbus

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—Thuy Lam, business applications manager, Thiess

"In the end, [IBM Maximo software] helps us deliver a higher level of customer service and better enables the practitioners to save lives."

—Thuy Lam, business applications manager, Thiess

"In the healthcare environment, being able to make decisions before an incident happens is critical, and we're able to prioritize the 5,000 alarms we see every day and act on them accordingly," says Mr. Lam. "We're moving from a highly reactive maintenance-based workload to a more preventive maintenance workload, and that's enabled us to reduce our unplanned maintenance costs substantially." In fact, Thiess reduced the after-hours premiums it pays to contractors by 80 percent and likewise decreased its internal asset-management costs by USD30,000 per day.

Maximo software manages assets horizontally and vertically. The horizontal view of a component under management, such as a fan, benchmarks all similar assets to create a view of the asset's operation, serviceability and replacement cycle. The system collects information about the serviceability of the asset and costs to repair. The vertical view treats the component as part of another asset. For example, it treats the fan as a component of an air-conditioning system and then considers the lifecycle of the air-conditioning unit with that particular fan unit installed, including the associated impact of any preventive maintenance required on both the air-conditioning unit and the fan.

Remote access for field staff

The Maximo solution also delivers significant productivity gains to Thiess, particularly in the area of staff management. Thiess field technicians access work orders through mobile devices with IBM Maximo Everyplace® software, helping them respond remotely to maintenance and procurement issues, eliminate paperwork and schedule service calls.

Additionally, Thiess improved existing processes, providing rapid response to business-critical issues, and it forecasts labor and material needs with great accuracy, significantly impacting cost control. "Managing a healthcare infrastructure, we had to deal with volumes of paperwork. Now we have an end-to-end solution that originates at the alarm triggered from a BMS system and is fully automated right through to the technician's tablet," says Mr. Lam. "In the end, it helps us deliver a higher level of customer service and better enables the practitioners to save lives."

For more information

To learn more about IBM Maximo and IBM Tivoli Netcool/OMNIbus software, please contact your IBM marketing representative or IBM Business Partner, or visit the following website:
ibm.com/software/tivoli

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