
Fixing maintenance

Properly implemented, maintenance management systems can help transform the efficiency of plant engineering departments. Steed Webzell reports on what makes best practice



If it's true that plant asset management is 90% information processing and 10% engineering, then implementing the right CMMS (computerised maintenance management system) must be essential. It's the key to scheduling plant technicians to the right plant equipment with the right tools, skills and permits for work, at the right time.

But that's not quite all. Let's be honest here: any CMMS is only as good as the people who run it. So, if plant engineers fail to input data correctly or when they should, the premise will fail. And with plant management dominated by production and profit, rather than maintenance – meaning funding for training etc isn't huge – there can be problems.

So where's the starting point? Well, for many, the road to better maintenance management should perhaps begin by using a benchmarking tool, such as AMIS (asset management improvement service), from MCP Consulting and Training, which has conducted assessments for more than 1,500 sites. One such is Diageo's Guinness Brewery at St James's Gate in Dublin, which achieved initial AMIS scores of 32% in its brewing plant and 48% in packaging, compared with a world class of 75%.

To get its maintenance improvement plan rolling, Diageo rolled out a reliability review programme for plant engineers, embracing the principles of operator asset care or autonomous maintenance. The emphasis then moved to 'team engagement' and improving performance with five themes: making shift managers accountable for aspects of asset care; ensuring team member involvement; incorporating targets for planning and ditto for continuous improvement; and promoting maintenance in performance management.

With all that in place, Diageo says the focus shifted up a gear – assigning high performance teams to get 20% of maintenance activity to come from continuous improvement, so that plant engineers were responsible for solving previously intractable problems. As a result, Diageo reports chronic failures were eliminated, because the continuous improvement work was

drilling down into the causes. Today, both the brewing and packaging plants are achieving scores above 75%. Failures are rare and plant engineer activities have moved on to solving process issues. The plant itself has also reaped financial benefits, with yield alone rising 20%.

But that story of success is not replicated everywhere. Shire Systems, which claims more than 10,000 users of its CMMS, reports several calls from frustrated plant engineers fighting to keep their systems clear of the management axe. Managers invariably want to replace them with ERP (enterprise resource planning) business system modules.

CMMS or business?

Shire argues that CMMS, unlike ERP, is primarily a forward-looking, technical management system that addresses practical, real-time time maintenance requirements – and hence its value. One company concurring is Bedford-based brewer Charles Wells, which uses Shire's FrontLine CMMS. Graham Walker, engineering administrator, cites a recent situation when it was faced with coping with a 30% increase in production. He knew the transition to 24/7 operations would remove the opportunity for planned maintenance at weekends, yet place even more emphasis on plant reliability and uptime.

Walker made that work by going for an upgrade to mobile maintenance management, using Shire's HandiWorks and HandiParts add-ons, which allow technicians to communicate remotely with the CMMS, using hand-held PDAs (personal digital assistants). In initial trials, the plant teams received 12 PDAs and Walker says he saw a 6% increase in productivity, along with a 10% improvement in accurate reporting of corrective maintenance tasks during routine rounds. He also says that Charles Wells' system manages everything from engineering stores to spares purchasing and budgetary controls.

So what makes a good CMMS? Shire Systems reckons plant engineers should consider the following pointers. It needs to be used throughout an organisation by a broad user base. It needs to

Above: improving maintenance efficiency requires serious scheduling

Above right: the new Dublin Airport, supported by

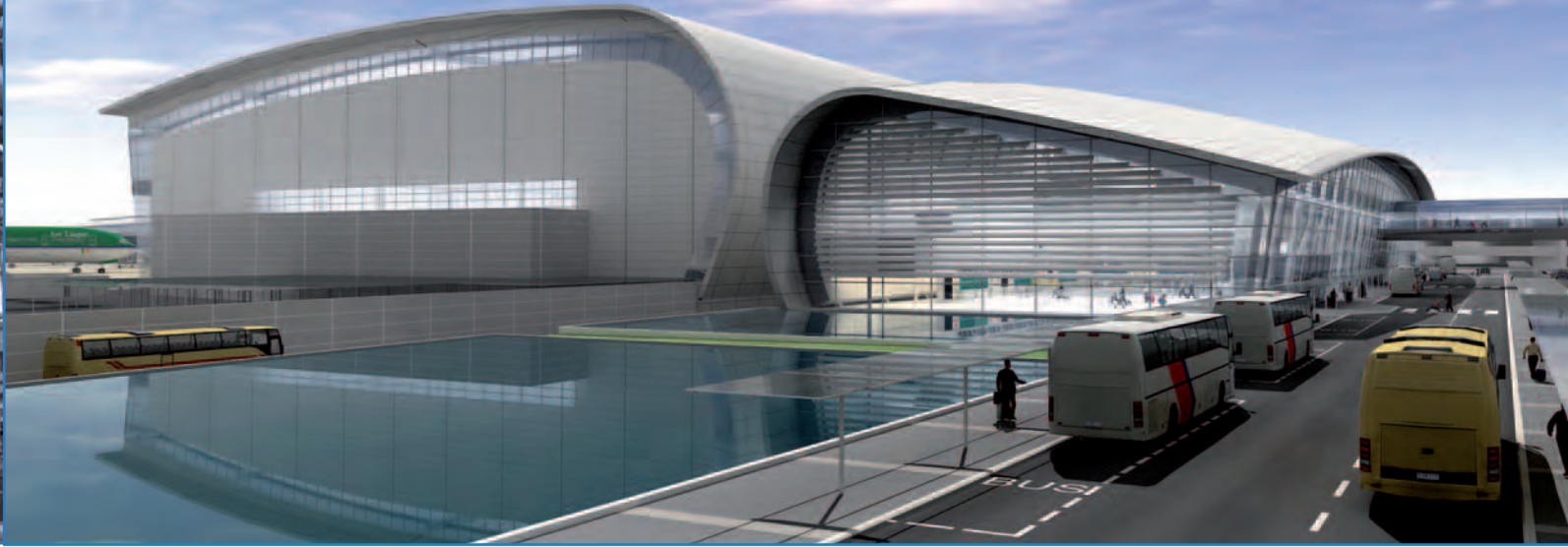
Mainsaver

Below: Mick

Saltzer,

Mainnovation





become an integral part of other management processes and systems. All work should be processed and documented using the system – and that includes planning and scheduling. A set of project tasks and a job plan library needs to be developed and used. Work management and materials management must also be integrated.

The company also suggests that project managers should aim to achieve ROI (return on investment) within six to 24 months – and make that happen by defining KPIs (key performance indicators) that guide activities and gauge success. And Shire reckons that, with all that in place, plant managers might sensibly expect overall maintenance costs to be reduced by 20–40% while parts inventory values fall by 20–30%.

But, if all plants could expect improvements like that, engineering managers would be queuing up for maintenance management systems – and they're not. Spidex Software is one CMMS developer that claims "strong demand" though. It cites Dublin Airport, where the engineering department opted for an upgrade to its Mainsaver v10.2, in a bid to cope with rapid expansion. "Version 10 will contribute significantly towards bringing the airport up to date with maintenance management system best practice, including the latest reporting capabilities," enthuses engineering manager Margaret Duffy.

It's a similar story at the Halewood International bottling factory in Liverpool, where the 20-strong plant engineering team praises the virtues of CMMS, this time delivered by Idhammar. One of this team's KPIs, for example, is the number of outstanding job cards for maintenance – measured by the number of worksheets issued, compared with those completed correctly and returned on time.

"When we started measuring, we were inundated with outstanding job cards and some jobs were being missed. Since implementing the CMMS, we've gained control and, having more than halved the number of outstanding jobs, we're well on our way to reaching our initial target of 10," says Graeme Macfarlane, continuous improvement director.


However, this is not the majority view. Industry analysts report that 70% of plants are yet to commit to CMMSs – although they also argue that newer system factors look set to change this statistic. Among these are increased functionality, greater systems integration, enhanced mobility via remote electronic and PDA access, improved ease-of-use, and better reporting via CMMS 'dashboards'.

So what of so-called EAM (enterprise asset management) systems: a halfway house between CMMS and ERP maybe? Let's not worry too much about market positioning; the fact is that EAM is providing some manufacturers with a worthy solution that improves overall 'asset' management and uptime by providing for holistic management.

EAMing for the stars

A case in point is the Lichfield site of pneumatics specialist Norgren, which recently installed the first phase of an Infor EAM system in nine days. This system will support Norgren's efforts to streamline its maintenance services by creating a dashboard to monitor machine availability and response times.

Previously, spreadsheets meant that Norgren's maintenance staff would have to check for new requests. Now, there is an Infor EAM terminal on each of Norgren's four production lines. If there is a machine breakdown, workers log a maintenance request via their terminal. This generates a work order that, with Infor's dashboard, is received on each plant engineer's PC or mobile.

While Norgren is clearly pleased with its investment, Mick Saltzer, managing consultant for Mainnovation, says that, too often, plants implement an EAM system, only to find that the benefits anticipated are not delivered. Saltzer suggests turning to value-driven maintenance (VDM) methodology, which, he says, is increasingly being used by organisations looking to benchmark performance, derive an improvement agenda and quantify its value. "The VDM control panel is becoming a standard for EAM, and CMMS KPI reporting and performance monitoring," he says. 

Pointers

- Choosing the right CMMS or EAM system is key, but not as important as training your maintenance people
- To achieve serious improvement, investigate AMIS, VDM or similar transformation methods
- Beware plant managers who advocate pulling the plug on CMMS, in favour of pure business systems
- Instead, encourage CMMS use throughout the organisation, including for planning, scheduling and plant documentation