



## Case Study

**LINPAC Packaging drive for world-class performance  
with Lighthouse Systems MES**

*Shopfloor-Online pays for itself in less than 12 months through  
productivity gains and cost reductions*



When LINPAC Packaging set out on its quest for an MES solution the goal was quite clear – to find an automated system to help in the collection, analysis and presentation of data from the manufacturing area in order to improve visibility of information and, therefore, enhance plant performance and OEE. In fact, the Vice President Operations had a vision of a dashboard for all factories with red and green light systems clearly showing him what was right and when things were going wrong across all factories so that action could be taken quickly and effectively. Developing a template for all manufacturing sites meant starting with a pilot project and

then extending the system site by site across all LINPAC operations.

Gerry O’Connor, Solution Delivery Leader, comments, “[Previously] We had an in-house system that had never quite delivered so we were only too aware of the difficulties and limitations of this approach. But we still needed to decide whether to continue with that known approach or move to a standard package that could be tweaked to fit specific LINPAC requirements. A cost analysis and knowledge of available systems lead us to Lighthouse Systems and Shopfloor-Online. The software would deliver the manufacturing focus we required and interface with our ERP

system from Oracle.” Some of the key requirements were:

### **Downtime**

The LINPAC facilities operate 24 x 7 all year round, producing commodity packaging products that must adhere to stringent quality standards. Unit values may be low but the scale of production means that company performance is good. However, this relies on the production lines operating at full capacity and allows little margin for downtime. In fact, extended periods of downtime can present significant issues for the company and must be minimised wherever possible. Highlighting downtime is the first step but then the system needs to elaborate with details as to the reason for the stoppage. If there are several short periods of downtime it may be that there is a training issue with a particular operator. Knowing this can eliminate the

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issue quickly and therefore improve overall performance in the longer term.

Gerry O’Connor says, “By getting data directly from machines on the operations area we get instant views of activity, output and downtime. A few short periods of downtime may not impact our output to any great extent. However, a number of short periods can add up to a significant chunk of time and that could be serious. The Lighthouse system lets us drill down into the detail so that we can assess the reasons for stoppages on the operations area and take appropriate actions to put things right. And Lighthouse helped us to source the right PLCs to operate on our production lines so that the data collected is accurate, reliable and timely.”

### **OEE**

By the same token, data delivered directly from the operations area gives an instant and accurate view of waste, speed of lines and OEE.



O'Connor comments, "OEE is a key metric for us and the area where we need to see consistent performance. Visibility of overall productivity means that measures can be taken in real time to confront issues and rectify problems. OEE improvements promised to be a major chance to demonstrate savings in this implementation. With the Lighthouse system not only do we get real-time OEE for each line, but we are able to see on dashboards how the current performance compares with the best we've ever achieved for the product being made on the line, so we have a real and sustained drive to increase performance"

### **Waste**

At LINPAC the need for close scrutiny of every aspect of the production process and the materials used is essential for commercial success. With raw materials accounting for between 50 and 70 percent of manufacturing costs LINPAC must make sure that actual material usage versus estimated requirements match as closely as possible. If not, the impact on profits can be significant.

### **Quality**

The Line Operatives are responsible for quality and LINPAC needed to support them



to ensure they were always working with the correct quality control plan and to verify that checks are being carried out at the correct frequency and any exceptions dealt with. The operator dashboard of Shopfloor-Online not only shows production efficiencies it also reminds operators when checks are due and always uses the correct specifications for the product being made.

### **Starting with a pilot**

It was clear that the biggest opportunity to achieve savings would come from the manufacturing process itself. So, as soon as the decision was taken to work with Lighthouse Systems the pilot project was launched at the St Helens factory. It was important to make sure that the people

actively using the software had a say in how it would be configured.

O'Connor adds, "Gaining operator buy-in from the very start was essential. So, we nominated a super user who could share local knowledge, champion the development within the plant and canvass opinion. We also held a number of user workshops at which we showed a vanilla Lighthouse solution and invited input from the staff. Once we had agreed measures and metrics for various line activities and the look and feel of the screens that operators would use we put the system onto one of the lines to test it out. We then rolled out the system across the rest of the St Helens site. This was Phase One of the project"

Phase Two of the deployment was the interface with the ERP system which was being upgraded in parallel to the MES implementation. The interface enables production schedules to be downloaded directly from the ERP system into Shopfloor-Online and production achievement to be uploaded into Oracle. The interface was completed during the summer of 2010. The system was also rolled out to a second factory in the UK with Germany and Italy following



close behind. The implementation extends to Poland, France and Spain through 2011.

### Seeing the benefits

Putting all of the manufacturing data into a single system means that operators and managers alike have the very latest information to hand at all times. Performance KPIs are visible to everyone and based on one accurate source of data. No more time wasted arguing about the numbers or even producing the numbers, now the energies can be directed to making improvements.

In some cases it has allowed LINPAC to vary the bill of materials in order to reduce the manufacturing costs without compromise to product quality. And, in fact, the plant has already achieved improvements in material and labour costs.

LINPAC has also reported a reduction in the raw materials used in the extrusion process

through its ability to more effectively use polymers. Add to that a reduction in spoilage and an improvement in foam yield and the project is already proving to be a great success.

At St Helens much of the waste materials in the process can be recycled, which can give rise to a feeling that such waste doesn't matter as it will be reused. But waste still consumes energy to recycle and energy that could have been avoided had the waste not been created in the first place. One of the early benefits was to reduce the waste generation/recycling.

The system also automatically prints barcode labels for finished goods, saving time for operators, reducing errors and enabling full product traceability.

O'Connor adds, "The numbers that came back from the St Helens pilot validated the assertion that better information would save money for the organisation. Our projects have to deliver a pay back within 12 months

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to be considered by the board and we have been able to meet that requirement with Lighthouse. We now have a much better handle on material usage and improved visibility of the reasons for downtime. Dashboards give us real time awareness of what is happening across the plants so we don't have to wait until the end of shift reports to take action. Our reviews are more regular now and they help steer managers and shift leaders to areas where processes can be improved."

The Lighthouse project has gone so well that LINPAC has asked Lighthouse to deliver 24 x 7 cover for its system. The company envisages the system being enhanced over time and expects it to be used in all LINPAC plants globally in the near future. Although the scope of future phases is yet to be decided, there is discussion afoot regarding how the Lighthouse system might be able to give improved visibility of energy consumption in specific processes thus enabling LINPAC to get smarter on management of its energy costs. This might also put other overheads under the spotlight in the future.

*Lighthouse Systems is one of the world's leading developers of Manufacturing Execution Systems (MES) with offices in London, Singapore, Australia and Rochester, NY. Lighthouse Systems Shopfloor-Online is web based modular software that provides real time visibility of the entire manufacturing operations environment. Applications include Maintenance Management, Concern Management, Quality, SPC, Downtime, OEE, Spoilage and Inventory Traceability. Shopfloor-Online is being used in a wide range of industries with some of the biggest manufacturing companies; it is deployed in 15 languages in 28 countries.*

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