

MES, a key success factor in the business transformation journey of Formica

The Lighthouse MES was deployed in a record time across Formica's five European plants.

Executive Summary

Formica Group is the world's largest manufacturer of High Pressure Laminate (HPL).

In order to improve make-to-order competitiveness and to drive up customer satisfaction, Formica Group went on a business transformation journey, that required the roll-out of new business systems.

In Europe, for the management of shop floor operations, Formica selected the Lighthouse MES, Shopfloor-Online. The MES went live in two factories, at the same time as the new global ERP, then was deployed at a fast pace, across three other plants. Within a tight 12 months period, all five European plants were running Shopfloor-Online. Amongst other benefits, the MES seamlessly interfaces with the ERP, providing real-time inventory accuracy.

With the improvements brought in by the business systems transformation, Formica are now able to meet delivery targets over 90% of the time.

Drivers for change

Improving made-to-order competitiveness and driving up customer satisfaction were the goals that took Formica on a profound business transformation journey.

To achieve this transformation, the Company needed to upgrade its legacy Business Information Systems and chose a new ERP to roll-out across the organisation. However, to address the needs of plant level activities focused on the fulfilment of production orders, each region was given the responsibility to select its own solution, providing it could interface seamlessly with the new ERP.



Finding a solution to replace the legacy information systems across all plants in Europe

The European Business of Formica comprises five plants. Three plants make High Pressure Laminate products, one plant makes Continuous Pressure Laminate (CPL) as well as bonded products (worktops) and one plant manufactures the tools used in the High Pressure Laminate process.

With little data captured electronically, all plants used to experience shortfalls, sometimes significant, in scheduling, as well as in inventory control.

The ERP programme was already rolling in America when the European IT team, based in Newcastle, started on their search for a solution to interface with the new ERP, Infor LX on the shop floor.

Quickly, the Team reviewed three solutions: the ERP vendor's MES solution, the North American in-house system and Lighthouse Systems MES software.



“A key success factor of the Formica MES project has been the significant engagement of experienced shop floor workers in the evaluation and design phases”

Tim Barber

Why Shopfloor-Online™ and Lighthouse Systems?

After an initial feasibility study, Formica identified Shopfloor-Online MES as one of the possible contenders and asked both shortlisted providers to assess requirements, and produce a proof of concept.

“The results were compelling for Lighthouse”, commented Chris Davies,

IT European Manager “even though they had had far less exposure to our requirements, the functionalities of their software Shopfloor-Online combined with Lighthouse’s ability to understand our business process and turn around a credible demonstration won the decision over”.

Shopfloor-Online MES at Formica

Challenges of make-to-order in HPL manufacturing

HPL is made of a top layer, called a décor sheet and a bottom layer, made of several resin-coated Kraft paper sheets. The manufacturing process comprises four steps: treatment, collation, pressing, finishing. At each step of the process, inventory of semi-finished goods is created. Some inventory is immediately used in the next process step, whilst

some is entered into stock.

Finished products are packed and labelled, then entered into stock or shipped to customers.

Formica makes 10,000s of HPL products. Due to the large number of references, WIP stock accuracy is critical, even more so, in the make-to-order use case.

The manufacturing process comprises four steps



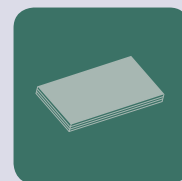
treatment



collation



pressing



finishing



Inventory control and management

Initially the Business had planned for Shopfloor-Online to simply deliver a user-friendly front-end to the ERP and address exclusively inventory management requirements.

MES requirements were to:

- download production orders from the ERP,
- track work orders at each of the four steps of the process, i.e. treatment, collation, pressing, finishing,
- create, manage and track inventory of finished and semi-finished goods, using mobile barcode scanners, thus supporting the packing, moving around the shop floor, consumption on the lines and unpacking,
- confirm inventory of finished and semi-finished goods back to the ERP.

However, as the project progressed in the design phase, the Formica team realised that Shopfloor-Online could deliver more than they had initially planned and made the decision to expand the scope of the MES to include scheduling.

“The roll-out of the new ERP provided an opportunity for Formica Europe to find and adopt a single standard system to manage production, i.e. to get a Manufacturing Execution System (MES)”, explained Chris Davies.

Planning go-live and roll-out in record time

The Group ERP project was big. It touched every aspect of Formica’s business and was running to a demanding project schedule. MES had to align with this and go-live concurrently with ERP on a month end.

Lighthouse scheduled the roll-out of the MES to suit differences in the manufacturing process of HPL and CPL.

Shopfloor-Online was deployed at the same time as the ERP, in North Shields (UK) and Valencia (Spain), then 4 months later in Kolho (Finland), and finally, in Newton Aycliff (UK), four months after that.

“During the initial implementation Formica Europe was perceived as a risk because of Lighthouse MES being the

unknown quantity”, commented Chris, “however the MES deployment delivered above expectations”.

Operators adopted the systems universally and quickly because it made their work so much easier. “A key success factor of the Formica MES project has been the significant engagement of experienced shop floor workers in the evaluation and design phases”, commented Tim Barber.

Integrating another manufacturing process in the same MES model

Just one year after the deployment in North Shields, and seeing the benefits made by MES in day-to-day operations, Formica considered how to implement the MES at the Quillian factory in France. This site manufactures the plating tools to create the surface finish on laminated sheets.

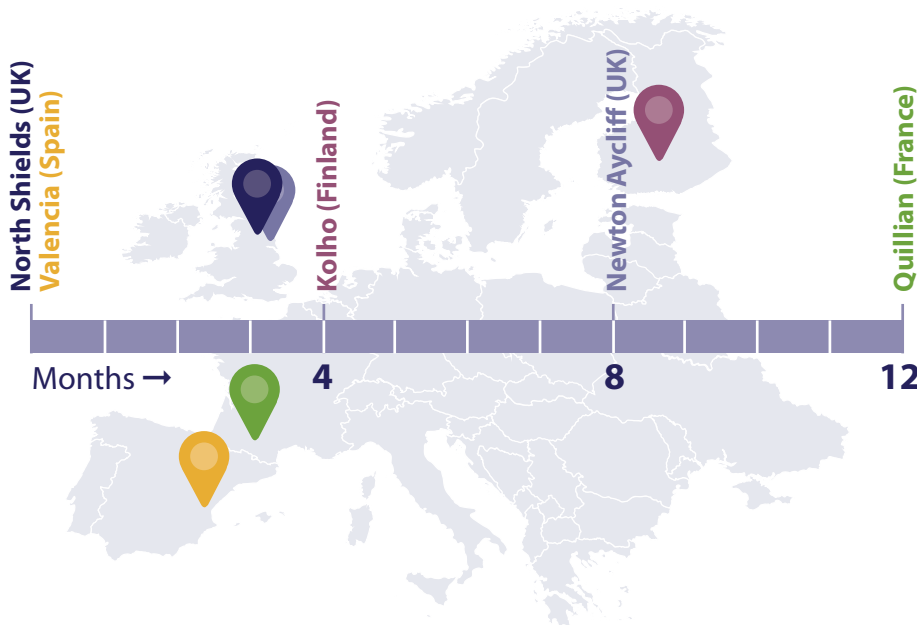
This is a very different process from HPL, with many more operations to make new tools and refurbish old. There was a need for a simple solution where Formica could track WIP materials through the numerous operations.

Lighthouse was able to integrate this requirement easily in the Formica MES Factory Model, allowing mobile scanners on the shop floor to scan the progress of each tool as it moves from one operation to the next.



“...Shopfloor-Online is opening doors on opportunities for improvement projects which were unthinkable in the past when we had a manual system in place”

Paul Foreman



Delivery targets met over 90% of the time

Formica has gained in agility and resilience and has achieved its goal to improve customer satisfaction efficiently.

The roll-out of Shopfloor-Online that took place alongside a business process change as well as ERP change had set out to fulfil Formica's promise to deliver all customer orders on-time. Paul Foreman, Chief Operating Officer, reflects, "With so many changes having happened at the same time in our business processes and systems, it's not easy to pinpoint what made the biggest difference, but we are now meeting on-time-delivery targets over 90% of the time, and the MES plays a key role in this".

"Because of the visibility it provides on operations, Shopfloor-Online is opening doors on opportunities for improvement projects which were unthinkable in the past when we had a manual system in place", said Paul Foreman.

The Lighthouse MES delivers:

- a user-friendly front-end for operators to record activities and support the process,
- live accurate data to the ERP,
- great WIP stock accuracy, providing confidence in stock levels and ensuring that all press orders can be fulfilled according to the schedule,
- a central place for all the manufacturing data, making it available for reporting and analysis.

Hosted in Formica's corporate datacentre in the USA, Shopfloor-Online is accessed via a web-browser by about 200 operators across all European plants.



About FORMICA

Formica Group is the world's largest manufacturer of High Pressure Laminate (HPL). The Formica Group of companies stands for quality, service and innovative product lines. It supplies branded, designed and surfacing solutions for commercial and residential customers worldwide. Applications of Formica products are everywhere, from kitchen worktops and fire doors, to exterior façades and interior wall panels, and many more besides. The Formica Group of companies operates 15 manufacturing sites in the USA, Canada, Europe and Asia.

 **Lighthouse**

Lighthouse Systems is a world-leading vendor of MES/MOM software.

Shopfloor-Online™, Lighthouse MES, supports hundreds of manufacturing organisations on their journey towards the digital factory. The MES software connects to all shop floor equipment and the ERP, delivering real-time visibility of the entire manufacturing operations environment. With Shopfloor-Online, organisations are: better utilising assets, improving quality and customer satisfaction, reducing direct and indirect costs, and improving their overall competitiveness. The software is modular with functionality across all four areas of plant operations: production, quality, inventory and maintenance. Shopfloor-Online is available on premise, in the corporate data centre and in the Cloud.

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