

Electronics LED Lighting Manufacturer Increasing bottom-line revenue with MOM software solutions

Business challenges

Complex supply chain Meet quality standards Increase profit margins

Keys to success

Improved visibility of manufacturing processes Track quality Increased collaboration

Results

Greater manufacturing flexibility Increased business decision making Improved bottom-line revenue

Manufacturing Operations Management (MOM) Software improves bottom-line revenue

The customer is a leadingedge manufacturer of LED lighting systems. Established early on, the company has built a longstanding customer base making it a market leader. Thanks to its innovative products, commitment to quality, and a well-coordinated team of employees. They provide LED lighting to customers in professional, consumer, and IoT spaces making them dynamic and globally active.

The manufacturer had a complex supply chain, involving multiple suppliers and partners, which made it difficult to manage inventory and delivery schedules. Secondly, the company was struggling to meet the increasing demand for customized products



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while maintaining high levels of quality. Finally, the company was facing intense competition from both domestic and international players, putting pressure on its profit margins.

Lastly, as competition increased and customers demanded more customization and faster delivery times, they recognized that they needed to modernize their operations to stay ahead of the curve. Within the last two years, the company embarked on a digital transformation journey, implementing Manufacturing Operations Management (MOM) software to improve its manufacturing processes and increase its bottomline revenue.

Complex supply chain & demanding customers challenges planning, scheduling, and quality

The area of focus for their project was the production floor, which would have impactful business effects upon implementation. Especially because the bottom-line revenue was

The successful implementation of Manufacturing Operations Management (MOM) software necessitates both software customization and a partner who comprehends the company's current business operations and can assist with the required organizational change. impacted by inefficiency from the production floor, which caused delays and increased costs. This was a major concern for the company's leadership team if they were going to continue with their product portfolio and keep customers satisfied.

The customer's innovative product involved a complex supply chain that added to the intricacy of planning and scheduling the manufacturing operations of LED lighting. Planners and schedulers would write out plans on spreadsheets, but due to changes in lead times and limited resources the manual processes were insufficient. Even with their extensive knowledge and well-experienced planners and schedulers, trying to keep up with actual demand versus forecasted and capacity restraints, schedules could not be attained, leading to delivery delays. The wrong processes were carried out at the wrong time.

Previously, the customer would plan operations using spreadsheets, meeting notes, and other personnel input. It required a lot of manual effort. This approach decreased the clarity of what was actually happening on the production floor. Opening the door to human error such as mistakes in data entry, people forgetting to take notes, and missed meetings to collaborate. Leaving little room for understanding production priorities and bottlenecks leading to capacity overloads.

They were already using their enterprise resource planning (ERP) system to

plan and schedule manufacturing operations. However, with its limited ability to visualize what-if scenarios, take manufacturing constraints into consideration, and determine infinite and finite scheduling combinations the ERP system could not provide a full transparent and accurate overview to effectively coordinate manufacturing processes.

Another area of concern was the flow and organization of production. The Plant Manager was handling a guessing game on the production floor.



The maintenance team would fix machines as issues arose, which created significant bottlenecks and downtime. The balancing act of raw materials, machinery, and labor didn't meet the high level of quality the manufacturer set for their products. The amount of rework started piling up due to the machines with issues producing underqualified products. All leading to a significant increase in costs and delays.

The customer aimed to improve their productivity using their existing ERP system in conjunction with Manufacturing Operations Management (MOM) software platform. The goal was to increase bottom-line revenue.

Developing a solution with an expert partner

The LED lighting manufacturer successfully implemented an innovative solution to address their problems and improve their bottom-line revenue, thanks to the expertise and guidance of a trusted partner in Manufacturing Operations Management (MOM) software. The software offers inventory management, production scheduling, quality control, and supply chain management for the manufacturing process and inefficiencies in a holistic real-time view.

A more comprehensive overview of manufacturing operations was introduced so that the plant could cut down on delays through decreased rework and attaining set schedules. Advanced Planning and Scheduling (APS), one of the features of MOM software was used to examine each production step individually. It would calculate start, end, and throughput times depending on the lot size. Planners use the software to accurately determine the critical ratio - the remaining time to the due date divided by the shop processing time that is still available. The critical ratio is a key indicator

of the status of each step such as being ahead of, behind, or on schedule. It guides planners in prioritizing job orders and making resource adjustments to address bottlenecks.

Another aspect of the MOM software was quality management. This feature allowed Quality Managers to identify trends in quality issues and take corrective action toward the root cause. It consistently tracked the quality of products throughout the entire production process to help identify quality issues before becoming significant problems such as what was previously occurring.

For the implementation project, a link was established between MOM software and the different processes on the production floor to make product plans, schedules, sequences, and quality metrics available at the appropriate workstations. The reports list all the machines, equipment, and labor daily.



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Flexible manufacturing eases burdens

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orders and quality documentation control, plus all other related information.

Progress reports of each production are now visible to the planning department, drastically reducing the planners' workload. Nonconformance and quality audit progress reports are also visible to Plant Managers in a more digestible way instead of just being available to Quality Managers. Each step eases the Plant Manager's burden of controlling the shop floor. Freeing them up to think outside the box and make other important business decisions.

The LED light manufacturer emphasized that the successful

implementation of Manufacturing Operations Management (MOM) software necessitates both software customization and a partner who comprehends the company's current business operations. In addition, can assist with the required organizational change, just like what they experienced with their implementation project. Additional requirements that arose during the project could be easily integrated thanks to the new technology that has allowed for a flexible manufacturing system.

Recognized Results

The MOM technology was a good fit for the LED lighting manufacturer because they can optimize lot sizes based on resource availability to fully utilize capacity. Because of the increased visibility of the manufacturing process, customer satisfaction increased. Preventative and corrective actions can be taken towards quality issues due to automated systems and streamlining many of the administrative tasks, minimizing the risk of errors. The overall system effectiveness of the plant was improved given their complex needs.

The manufacturer especially liked the easy connection to their existing ERP system and MOM software since many adjustments can be realized directly in the MOM platform with little effort. Using the ERP system's planning and scheduling tools would have been more complex and therefore more costly.

Because of the successful implementation and the positive impact of MOM software, upper management of the LED light manufacturer is convinced to continuously implement new developments within the program. The business benefits included a decrease in the cost of goods sold and an increase in productivity consequently increasing the bottom-line revenue.

Before they implemented MOM software and its features, their production planning was based on manual time-consuming processes. Now, with MOM software there is a central database for all information from the production floor. This makes the entire manufacturing process transparent because there is a common understanding of which orders are most important or where bottlenecks exist. They can take appropriate remedial action earlier, faster, and in a more targeted manner.

By using MOM software, many discussions regarding production planning, control, and quality issues can be significantly shortened. The increase in delivery reliability and the reduction in lead times are points from which customers directly benefit. The reduction of internal effort while increasing the service level increases their competitiveness.

All these improvements have resulted in the new planning solution and quality system gaining trust among the LED lighting manufacturer's employees and increasing their satisfaction. Instead of working with multiple manual systems, all production processes are now visible in the MOM platform. The relevant performance indicators, such as productivity, work in process, and production auditing are now optimized. Less time is lost due to constant change and product reruns.

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