

Customer Value Enhancement Award MES Solutions in the Packaging Industry Global, 2011

Frost & Sullivan's Global Research Platform

Frost & Sullivan is in its 50th year in business with a global research organization of 1,800 analysts and consultants who monitor more than 300 industries and 250,000 companies. The company's research philosophy originates with the CEO's 360-Degree Perspective™, which serves as the foundation of its TEAM Research™ methodology. This unique approach enables us to determine how best-in-class companies worldwide manage growth, innovation and leadership. Based on the findings of this Best Practices research, Frost & Sullivan is proud to present the 2011 Global Customer Value Enhancement Award in Manufacturing Execution Systems (MES) Solutions in the Packaging Industry to Lighthouse Systems.

Significance of the Customer Value Enhancement Award

Key Industry Challenges

End users in the packaging industry strive for high quality standards and compel their suppliers to meet these standards as well as their specifications. Compliance to quality standards is the critical attribute that end users look for in selecting a packaging products supplier. This is especially true among consumer goods manufacturers, where the product quality is monitored by the United States Food and Drug Administration (FDA) and any deviations from regulations may have significant negative ramifications.

Packaging is a high-volume industry and demands high-speed production to cater to end-users' needs. In such a high-speed, high-volume environment, solutions like enterprise resource planning (ERP) may not suffice. Manufacturers in the packaging industry need a complete and a modular MES solution to optimize their production processes.

In this global, cost-competitive industry, packaging companies require enterprise-wide visibility to monitor and control their diverse worldwide manufacturing processes. They need a single, standardized solution that is easy to implement and will increase their return on investment. The case is even stronger for regional packaging solution providers, as the need to be globally competitive while effectively managing costs is instrumental to long-term success and sustainability. Packaging end-users also face difficulties in managing the information across different locations and at different levels. A Web-enabled solution will allow them anytime, anywhere access and drive operational excellence while reducing performance variability.

Best Practice Award Analysis for Lighthouse Systems

The Frost & Sullivan Award for Customer Value Enhancement is presented each year to the company that has demonstrated excellence in implementing strategies that proactively create value for its customers with a focus on improving the return on the investment that customers make in its services or products. This award recognizes the company's inordinate focus on enhancing the value that its customers receive, beyond simply good customer service, leading to improved customer retention and ultimately customer base expansion.

Lighthouse Systems' Performance in MES Solutions in the Packaging Industry

Lighthouse Systems' unique capabilities in MES solutions have enabled packaging manufacturers to operate cost effectively, produce quickly in high volume, and all while complying with stringent quality standards. The real-time access and worldwide visibility to information have helped many end users optimize their production processes to become more proactive and competitive. The solutions from Lighthouse Systems have played a dominant role in reducing the spoilage, downtime, and inventory level for many leading players in the packaging industry. Lighthouse Systems has clearly been a go-to company for packaging manufacturers as it has witnessed 40 percent growth in revenues for the packaging industry during the current year.

Key Performance Drivers for Lighthouse Systems

Factor 1: Expansion of Customer Base

End users in the packaging industry value suppliers who deliver solutions that enable them to follow stringent specifications and quality requirements. For end users like consumer goods manufacturers, adherence to the highest quality standards also gives them a competitive advantage. Many MES providers' solutions focus on various functions in manufacturing processes, but very few focus on the specific intricacies involved in the packaging industry.

Lighthouse Systems' solutions for the packaging industry address major challenges such as quality, overall equipment effectiveness, energy monitoring, and maintenance management. The company's ability to work collaboratively with customers from the project conception stage to commencement and maintenance is truly commendable. During the course of a project, requirements are observed from a wide viewpoint involving users from the shop floor, engineering, and management.

A critical factor in the packaging industry is quality, which demands close management as most quality checks are done by the operators running the process, with different sample sizes and frequencies. The data volume involved is large, so users want to be alerted about possible problems rather than continuously sifting through reams of data to find them. The Shopfloor-Online MES solution from Lighthouse Systems provides unrivaled support for both operators and managers. It creates the quality control plan, taking into consideration all the peculiarities of different processes or products. Shopfloor-Online MES incorporates the necessary checks, while understanding the correct specifications to check against. It reminds when checks are due and guides through each check, raising the red flag for the out-of-spec measurement through statistical process control (SPC) rules. The solution from Lighthouse Systems also lets managers see reports in real time or on a monthly basis, to verify that all required checks and remedial actions have been carried out.

Lighthouse Systems has been a go-to company for packaging manufacturers due to its industry specific solutions. This is evident from the company's increasing market share and worldwide acceptance of its solutions by major packaging manufacturers such as Linpac Packaging, Rexam, Constar, and Crown.

Factor 2: Product Features

To streamline production activities and operate effectively in this high-volume and high-speed production environment, packaging industry players prefer a complete MES solution provider, as an ERP solution alone may not provide needed performance. Solutions from Lighthouse Systems include functions for scheduling, production, quality, inventory, resources, concern management, and asset management. With the inclusion of a maintenance management system in 2009, Lighthouse System has become a one-stop solution provider, providing a number of benefits to users including increased up-time, greater productivity, and a reduction of spare parts inventory.

Some of the broad functionalities found with Lighthouse Systems' solutions include:

- **Scheduling module** - Helps download and schedule production orders from ERP systems
- **Production module** - Keeps count of production and spoilage while recording downtime events
- **Quality module** - Manages the quality control plan, collects quality data, interfaces with gauging and measurement systems and performs quality reporting with SPC analysis
- **Inventory module** - Keeps track of inventory at all stages of production
- **Resources module** - Manages and keeps track of the use of people and energy in production processes
- **Concerns and complaints module** - Notifies individuals to address concerns through root-cause analyses

- **Asset management module** - Supports repair and maintenance

A client can choose any of these modules or set of modules to address specific challenges. Shopfloor-Online employs four major components that work together to deliver the required functionality:

- **Database:** Oracle or MS SQL Server
- **Web Server (IIS):** Shopfloor-Online Web application
- **Universal Data Interface:** an interfacing tool from Lighthouse Systems
- **Open connectivity:** to interface with plant equipment like programming logic controllers.

This architecture enhances system management, as it is server based and located in one central location. Lighthouse Systems' Shopfloor-Online MES solution has enabled operators on the factory floor to be more proactive regarding safety and machine performance, which makes the workplace leaner and more efficient. The solution has provided operators with a holistic view of all tasks, from production to quality and maintenance. Shopfloor-Online also helps senior management to relate the Key Performance Indicators (KPI) across the enterprise and take appropriate action in a highly dynamic environment. Lighthouse Systems understands user applications and provides a low-risk solution that is scalable and can be implemented in subsequent sections of the production area with new functionalities.

Many end users in the packaging industry, including prominent consumer goods manufacturers, vouch for the benefits of Lighthouse Systems' solutions. According to these users, Lighthouse's solutions drive a lean manufacturing environment by highlighting areas of waste, a capability that is sought after in the packaging industry. The dominance of Lighthouse Systems' solution in the packaging industry is evident from the fact that the company witnessed 40 percent growth in the packaging industry during the year ending July 2011.

Factor 3: Strategic Mergers, Acquisitions or Joint Ventures to Provide Additional Customer Benefits

Multinational packaging companies need to manage data at different locations and at different levels and thus strive for a single, standardized solution that can increase their ROI. These organizations prefer a single solution provider for their multiple facilities due to ease of integration, standardization, and support-service convenience.

Lighthouse Systems' solutions, which are Web-based, enable it to impose a standardized control plan throughout a plant and at different locations. The Web-based architecture gives flexibility in installing the components on a server or on multiple servers, getting rid of the islands created by individual client workstations in the factory, and providing worldwide visibility. These solutions can be easily integrated with existing Internet technology applications such as ERP without any business disruption. As an alternative to Lighthouse Systems' own direct go-to-market strategy, it has the option to collaborate with leading information technology service companies such as AtoS to implement and support its solutions in selected regions. Lighthouse Systems has similar collaborations across different geographic areas to support its solution sales and services where its own reach may be limited.

Conclusion

Lighthouse Systems' Web-based MES solution has enabled packaging manufacturers to improve quality, productivity, and up-time. The solutions from Lighthouse Systems have clearly showcased their value to multinational companies by providing them worldwide visibility of their production facilities. Based on Frost & Sullivan's independent analysis of Manufacturing Execution Systems Solutions in the Packaging Industry, Lighthouse Systems is being recognized with the 2011 Global Customer Value Enhancement Award.

The CEO 360-Degree Perspective™ - Visionary Platform for Growth Strategies

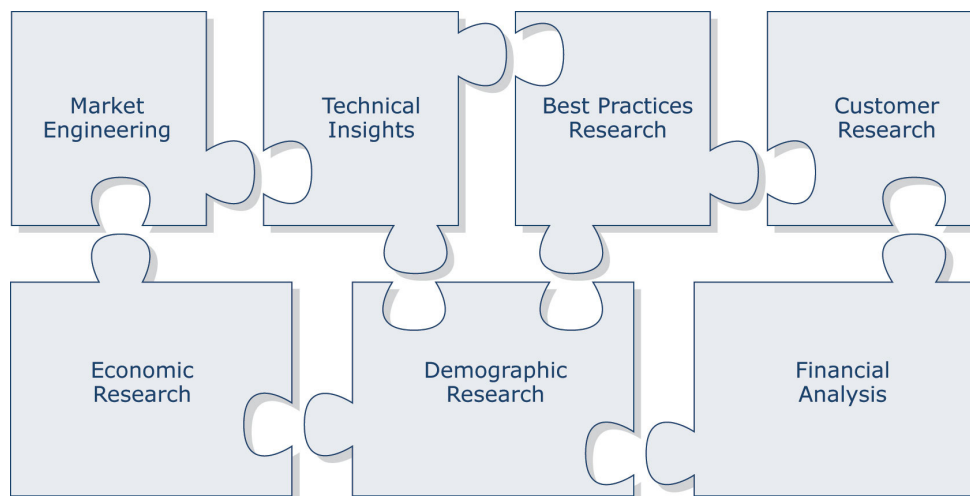
The CEO 360-Degree Perspective™ model provides a clear illustration of the complex business universe in which CEOs and their management teams live today. It represents the foundation of Frost & Sullivan's global research organization and provides the basis on which companies can gain a visionary and strategic understanding of the market. The CEO 360-Degree Perspective™ is also a "must-have" requirement for the identification and analysis of best-practice performance by industry leaders.

The CEO 360-Degree Perspective™ model enables our clients to gain a comprehensive, action-oriented understanding of market evolution and its implications for their companies' growth strategies. As illustrated in Chart 5 below, the following six-step process outlines how our researchers and consultants embed the CEO 360-Degree Perspective™ into their analyses and recommendations.

Critical Importance of TEAM Research

Frost & Sullivan's TEAM Research methodology represents the analytical rigor of our research process. It offers a 360-Degree view of industry challenges, trends, and issues by integrating all seven of Frost & Sullivan's research methodologies. Our experience has shown over the years that companies too often make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Frost & Sullivan contends that successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. In that vein, the letters T, E, A and M reflect our core technical, economic, applied (financial and best practices) and market analyses. The integration of these research disciplines into the TEAM Research methodology provides an evaluation platform for benchmarking industry players and for creating high-potential growth strategies for our clients.

Chart 2: Benchmarking Performance with TEAM Research



About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best-practice models to drive the generation, evaluation and implementation of powerful growth strategies. Frost & Sullivan leverages 50 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from more than 40 offices on six continents. To join our Growth Partnership, please visit <http://www.frost.com>.