



## **62<sup>nd</sup> Advanced Manufacturing Forum**

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**Sponsored by**

**The Center for the Management of Technological and Organizational Change**

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### **Lean Supply Chain e-Connectivity and Competitive Differentiation**

**Nancy McHenry**

**Vice President of Supply Chain**

**Topflight Corporation**

Supply chain e-connectivity and Lean manufacturing created a new business model for Topflight Corporation that resulted in a 30 percent growth in sales. Topflight, a leading producer of printed labels and die-cut components, looks for joint market success by leading its customers to challenge their assumptions and to create partnerships in change. Mutual vulnerability has resulted in joint problem-solving and joint implementation of dedicated customer manufacturing systems based on synchronization – the customer's Lean order flow and Topflight's Lean production flow.

Oftentimes suppliers are slow to embrace Lean because of negative burden transfer connotations; but Lean coupled with consignment turned into a win-win situation for Topflight and Estee Lauder. Topflight embraced Lean because its labels, by themselves, were not worth very much even though Topflight produces millions of labels for Estee Lauder, a manufacturer of skin care, makeup, fragrance and hair care products. (Estee Lauder includes the brand names of Aramis, Clinique, Prescriptives, Lab Series, Origins, Bobbi Brown, Aveda, Tommy Hilfiger, and Donna Karan, among others.) Topflight designed Estee Lauder's customer system on being paid for good production rather than usage.

When tackling a process flow, how is continuous improvement worked into the process? Topflight's continuous improvement required a radical re-engineering approach. The whole basis of the traditional payment cycle is the accounting control of a purchase order authorizing a receipt. The receipt is matched to an invoice, and the invoice of what was actually received is the basis for payment. Any incremental improvement to this approach would yield very little. But what if this cycle did not exist? No purchase order, no receipt, no invoice. Topflight is not at arms length but rather an extension of the Estee Lauder's individual Lean work cell. Estee Lauder is linked directly to Topflight's Lean work cell. (The automotive model says that if the truck was shipped, there must have been a seat in it, so the seat manufacturer is paid for the seat.)

Payment is made on good production. How? Go over the process with your customer. Where is the money? Instead of purchase price variance, look at total cost, at the impacts of balance sheets, cash flows and income statements. But even making sure these all go the right way at the same time can be misleading, McHenry cautioned. A responsive system is driven by changes in revenue. Revenue is what wins in the marketplace, especially when the product provides late-stage differentiation.

Designing customer systems to be paid for good production requires good data. McHenry allowed as how the only data that are consistently accurate are shipments. Shipments are the basis of revenue. Everything else being chased in the name of accuracy – usage, transactions, receipts – will not be as accurate as shipments. Control based on good shipments is tight.

Visibility of the Estee Lauder's production schedule is key. ERP-to-ERP transfer between Estee Lauder and Topflight occurs via an Excel<sup>®</sup> spreadsheet. Within 5 minutes, thousands of order lines are entered into Topflight's system and automatically expedited or de-expedited, with minor grouping performed where necessary. Topflight minimizes lead time through planning and execution, and eliminates inventory by streamlining work flows - speed of light data transfer and speed of light manufacturing. There are no arm's length order flows to impede the process.

Value stream mapping led Topflight to develop the dedicated manufacturing work cell to eliminate their largest chunk of lead time. It was not going to do much good to be able to transmit orders in five minutes if that speed could not be translated to the manufacturing floor. Further, any system has to be able to handle a variety of demand. Topflight optimizes set-up based on similarities – grouping within a common die and common color. McHenry advocates challenging the paradigm of the 'frozen zone'. Production planning needs to remain slushy enough to allow for true variation in customer demand. Constant adaptation to the constantly changing demand needs to be built into the automated interfaces. Many designs are possible. Challenge assumptions – why do you do what you do – rather than start with assumptions.