For a coating supply chain program to be effective, the coating company and the original equipment manufacturer (OEM) must collaborate to devise a unique program based on the OEM’s core processes and procedures. The finishing process is typically the final step before shipment to the customer, and it often causes a bottleneck. Proper application of supply chain principles in this phase will help ensure that the order processed quickly and efficiently, and eliminate this impediment to completion of the production. Some or all of the following techniques are being used by OEMs to reduce the time between completion of the production and finishing processes.

A key component of an effective coating supply chain program is the use of a full-service coating/plating company. A finishing company that provides a full range of corrosion protection services, such as electroless nickel, phosphate, and various spray coatings, can significantly reduce transportation and administrative costs.

To develop a coatings supply chain program, an OEM should first prepare a flowchart of the steps involved from the time the part is completed until it is returned from the finishing company. For instance, one OEM discovered that it took up to four days from the date the part was completed in their plant until it was shipped to the coating company. Administrative tasks can create a sizeable bottleneck, but can be significantly reduced. A supply chain program that turns transportation responsibilities (with limited exceptions) over to the coating partner can eliminate virtually all administrative delays from the completion schedule.

Scheduled daily pick-up and delivery not only helps ensure that the parts are returned as quickly as possible after processing—it also eliminates a major administrative burden. Expedited service should be available from the coating partner for orders having special requirements.

Re-engineering supply chains can reduce costs, cut delivery times, provide a significant competitive advantage, and enhance customer relationships.

Supply chain concepts can be applied to the finishing phase (coating or plating) of production to further cut costs and delivery times.
Many purchasers also require inspection of the coating application by independent inspectors. A finishing company that employs NACE-certified inspectors for quality control will help to ensure that the process is completed as smoothly and efficiently as possible, cutting days from the completion schedule.

For OEMs that use standard costing, or for parts that are processed for inventory, significant reductions in administrative costs are achievable in a properly designed supply chain program. In an effective supply chain coating program, the finishing process becomes just another step on the original work order (converting it from an outside to an inside process), thereby eliminating the need to produce a separate purchase order and invoice for each order. A record of the parts processed can be entered in the OEM’s system to maintain traceability, and a single invoice for all of the parts processed can be prepared monthly. Many OEMs estimate that the administrative costs associated with preparation of a purchase order and invoice can exceed $1,000 per order. An effective supply chain program can eliminate the need to prepare thousands of purchase orders and invoices annually.

The coating partner should have a dedicated team for the OEM to coordinate orders and process the parts. The experience and expertise developed by the team from working on the same parts with the same specifications enables the highest levels of accuracy and shortest processing time. A dedicated coordinator or expeditor can also make sure that any changes to the processing or delivery schedule are appropriately addressed and monitored.

For OEMs with very high volumes, it may be appropriate to create a satellite coating plant within an OEM’s production facility. Using all of the methods discussed above, an on-site satellite coating plant can produce maximum efficiency and flexibility for the fastest completion times possible. A recent study by the Texas A&M Supply Chain Systems Lab estimates that the value of a satellite plant far exceeds the total that an OEM spends on coating—it can be the equivalent of getting the coating for free.

Oftentimes, all or a part of an assembly is prepared for the OEM by an independent machine shop. Under the direction of the OEM, a supply chain program can be implemented in coordination with the machine shop, as well.

A coatings supply chain program transfers the burdens associated with the corrosion protection phase of the production cycle to the OEM’s coating supply chain partner, enabling the OEM to focus on its core manufacturing processes. An effective coatings supply chain program can help an OEM streamline the completion process and produce an overall decrease in coatings lead time. This, in turn, will lead to a greater number of completed orders per quarter, a better on-time delivery record, and measurable cost savings.

Reference

1 Texas A&M University Supply Chain Systems Laboratory, Vendor Managed Services study currently underway (2006).

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