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Simplifying Sourcing Series

Supporting Global End Markets: Does Your Contract Manufacturer Have an Efficient Solution?

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By Curtis Campbell

One of the benefits of using a contract manufacturer large enough to provide a complete manufacturing solution is that the associated outsourcing strategy can consider a variety of cost saving options. For companies serving a global market, a regionalized outsourcing strategy can align manufacturing with optimum logistics for larger end markets by building products near or in the regions where they are used. While some OEMs choose to do that by using different suppliers, utilizing a single contract manufacturer able to manufacture in multiple regions improves efficiency and leverages economies of scale.

This whitepaper discusses three areas that should be evaluated when considering whether this approach is appropriate plus looks at examples where this type of strategy has provided specific advantages. Key areas to be evaluated in making this choice include:

- Volumes and predictability of demand
- Regional customization requirements
- Local content requirements.

Volumes and Predictability of Demand

When volumes are highly predictable, it is easy to support production with a single location and ship around the world. Building from a single location maximizes economies of scale and minimizes transactions. In the case of lower volumes, it may be the only way to achieve economic order quantities. That said, in situations where demand is less predictable and fulfillment cycle time needs to be short, a regional approach may be better.

Regional Customization Requirements

Customization can be another factor in considering a regional approach. If units need to be customized to fit differing power requirements or user templates specific to given regions, there may be cost advantages to regional builds within the supply chain. Additionally, if there are user-specific configure-to-order (CTO) requirements, a regional approach shortens the fulfillment pipeline and reduces the finished goods inventory that would be required if a single location was supplying global demand.

Local content requirements

Tariff avoidance can also drive a regional focus. Some trade agreements require a specific portion of a product be built within a region or specific country in order to access that agreement's benefits. Regulations such as the International Traffic in Arms (ITAR) may limit the countries a product can be built in. Similarly, some governments have local content requirements built into their purchasing agreements. In those cases, a regional manufacturing approach may increase the ability to access restricted markets or result in more favorable tariff treatment across multiple regions.

Examples of Successful Regionalization Strategies

SigmaTron has developed tailored strategies to support customers with regionalized manufacturing requirements. The following examples illustrate the benefits and considerations associated with this strategy.

Some industries have very specialized end market requirements. For example, corporate headquarters in fast food and fast casual restaurants, dictate menu items and the equipment needed to support those items by region. Franchisees have choices in equipment configuration and a timeframe in which they need to buy it, but typically they are ordering small quantities. SigmaTron has helped one industrial food manufacturer address this challenge by manufacturing their products in Elk Grove Village, IL; Suzhou, PRC; and Acuna, Mexico to provide manufacturing local to each end market.

Common components are sourced centrally via SigmaTron's purchasing organization and shipped to each facility. In the event demand is increasing in a specific region, these shipments can be redirected to the area of high demand. Regionally-specific components related to power and language-specific control overlays are sourced regionally.

SigmaTron's test engineering team has developed a standard test set capable of testing all product configurations and shipped test sets to all facilities.

The result is that the customer has the standardization benefits and purchasing power of working with global manufacturer, yet a localized, configure-to-order (CTO) solution to support end markets where their customers are ordering small quantities of CTO product and want short lead-times. The localized solution eliminates the logistics pipeline that would be necessary if all products were built in a single location. Local sourcing of regionally-specific parts reduces logistics lead-time.

Products that are sold in mass installation settings also have unique challenges. Shipment timing is often driven by the end customer's installation schedule which can be impacted by delays in other areas of that project. There may also be specialized configurations unique to each project or region. Typically,

end customers want the exact quantity shipped to arrive when they are ready to install. Storage space is often limited and a late shipment can delay other phases of the installation that occur after the product is installed. Neither an EMS provider nor their original equipment manufacturer (OEM) customer want excess raw materials or finished goods inventory building up should the end customer's schedule push out. Similarly, enough raw materials and correctly configured finished goods inventory must be in place to ship as installation projects need the products.

For example, a customer in the renewable energy space utilizes SigmaTron's facility in Acuna, Mexico to support its North American customers and SigmaTron's Suzhou, PRC facility to support the rest of the world. The control systems are sold for mass installation settings, so demand is dictated by end customers' schedules and can change frequently.

To better address the needs of customers with this type of end market demand, SigmaTron has created a Manager of Account Planning position who coordinates activity between Program Managers and Purchasing, ensuring that changes in customer demand, material constraints and excess material associated with end customer schedule changes are being reconciled on a weekly basis.

In the case of this customer, shipments are made in specified quantities directly to end customers based on a just-in-time schedule. A blanket purchase order is in place and several weeks of product is stored in a finished goods Kanban. Replenishment timing is based on customer pulls.

The Manager of Account Planning coordinates globally, so if there is a pushout in one region and demand increase in the other region, purchasing can redirect raw material shipments to the region needing the inventory. SigmaTron's real-time systems provide the necessary visibility to support this effort.

This approach has also helped in the transition of different product generations. When the next generation of product is ready, reports identifying excess and obsolete components are generated so that the new product can be cut in as existing raw material is fully consumed by the previous product.

SigmaTron's manufacturing facility locations include U.S. locations near Silicon Valley and Chicago; three locations spread across Mexico; a facility in China; and a facility in Vietnam. This enables a scalable solution approach that offers customers the ability to build different product lines in different facilities when their requirements do not fit a single facility option. Forecasting and production layout are optimized for those projects.

SigmaTron is able to provide a tailored solution for its customers that can be as limited as PCBA manufacturing and as complex as system integration, fulfillment to end market and repair depot support. The Company also has engineering resources able to support product development activities.

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Achieving the lowest cost of ownership in an outsourced manufacturing strategy requires purchasing teams to look beyond labor costs. Regionalization represents one way an outsourcing strategy can be fine-tuned to shorten a logistics pipeline or take advantage of purchased part cost or tariff reductions by manufacturing near or within the end market.

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