

ONE SOURCE. GLOBAL OPTIONS.®

SIGMATRON
INTERNATIONAL

Simplifying Sourcing Series



Four Benefits of Real-Time Project Status Visibility

Four Benefits of Real-Time Project Status Visibility

By Curtis Campbell

It's safe to say this decade will go down as one of the most challenging in the history of electronics manufacturing outsourcing. Supply chain disruptions, allocation, steep spikes in demand, and now the challenge of balancing the need for inventory drawdowns during a period lowered demand are among the issues that have kept supply chain management teams up at night. Real-time project status visibility has never been more important. The team at SigmaTron International has systems and tools in place to address these challenges. This whitepaper looks at how these tools can solve not only current market challenges, but also ways they support optimizing the overall outsourcing strategy.

The four benefits of real-time project status visibility are:

- Ability to address market-driven challenges
- Ability to adopt a regional manufacturing strategy to shorten supply chains
- Ability to more cost effectively make product revisions
- Ability to support unique end market situations.

Ability to Address Market-Driven Challenges

The entire electronics manufacturing services (EMS) market built up materials inventories in excess of normal levels during the 2020-23 time period to guarantee component availability. In many cases, OEMs also built up finished goods inventories to hedge against spikes in demand. While material availability is improving across most commodities, demand has softened in many sectors, creating a situation where inventories and demand remain out of balance. At the same time, some parts continue to have long lead-times, which drives a need to ensure they are adequately planned for. This drives a need to have strong visibility into inventory-on-hand, inventory-on-order, work-in-process, finished goods and forecasted demand trends.

SigmaTron uses a combination of proprietary and internally-developed manufacturing execution systems (MES) for enterprise and shop floor management. All facilities utilize a common ERP system plus Product Lifecycle Management (PLM) tools.

The combination of an industry-standard ERP software with an internally-developed iScore suite of supply chain management tools enables all stakeholders to track demand, material on order, inventory, work-in-process, finished goods and shipments. An MRP Share program provides suppliers with complete customer forecast visibility, plus current inventory and material on order.

On the supply chain side, this system enables the purchasing team to view consumption across the company on a given part. SigmaTron's IT team has enhanced system capabilities to help reduce the workload material constraints are creating. All part fields in purchase orders include a date wanted and

supplier promise date. Larger suppliers receive a weekly data file of purchase orders so they can confirm or update promise dates. A third-party API that pulls broker and distributor inventory is integrated into the iScore system for situations when a supplier de-commits or customer demand changes create potential gaps in the pipeline. This information can be viewed simultaneously with the MRP plan to determine the viability of filling shortages in real time.

Program managers work with customers on a case-by-case basis to develop specific plans that draw down inventories in relation to customer forecasted drops in demand.

At a senior management level, there is strong focus on communicating with component manufacturers as well as distributors to highlight the criticality of projects and push back on policies that drive unacceptable risk such as requests for extended NCNR periods.

Program teams are running horizontal MRPs to view the total demand from each account and monitor the way consumption and demand is changing in upcoming weeks to look for early indicators of changes in demand. Some of the IT tools being utilized include:

- Inventory vs. demand in relation to the next 90, 120 and 180 days
- Dollarized push-pull reports that include dollarized cancellations to make it easier to view inventory status in both units and actual cost.

Purchasing and program teams continue to review and resize material bonds and finished goods kanbans on a much more frequent basis than in periods of stable demand.

Ability to Adopt a Regional Manufacturing Strategy to Shorten Supply Chains

A regional or multi-regional outsourcing strategy enables products to be built near their end markets. This strategy can reduce cost on components unique to the end market and shorten transport time which helps reduce finished good inventory requirements. SigmaTron has two U.S. facilities, three facilities in Mexico and facilities in China and Vietnam to support its customer's needs for offshore, nearshore and U.S.-based manufacturing. These locations also work well when a multi-regional strategy is beneficial.

SigmaTron's facilities in China and Mexico regularly support customers selling into those countries as well as customers whose products ship to other regions. In some cases, the facilities are building subassemblies to supply customer final assembly facilities within the same country.

Regionalization strategies can also be adjusted to supply multiple end markets. As an 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 order 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, SigmaTron's real-time systems visibility via iScore enables the supply chain management team to redirect shipments 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. Real-time systems visibility enables fast reaction to changes in demand and the ability to maintain optimal inventory levels across all regions.

Ability to More Cost Effectively Make Product Revisions

Market competition and evolving user needs drive a need for product designs revisions. On the manufacturing side, those engineering change orders (ECOs) often change bill of material (BOM) requirements. Real-time systems visibility helps OEMs better understand the material impact of ECOs. SigmaTron's team utilizes its real-time systems to quickly evaluate raw material on order, inventory on hand, work-in-process (WIP) and finished goods inventory, to calculate the cost impact of an ECO based on its cut-in date. Understanding this cost impact, enables OEM teams to time the cut-in to reduce inactive component inventory or the need to rework WIP or finished goods inventory.

Ability to Support Unique End Market Situations

Some industries have highly specialized requirements for product delivery schedules that fall outside typical outsourcing manufacturing delivery models. Real-time systems are critical to enabling a customized solution.

For example, with products sold in mass installation settings, 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 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.

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 utilizes a Manager of Account Planning 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.

There is no question that outsourcing manufacturing has gotten more complicated over the last few years. That said, SigmaTron's proprietary and off-the-shelf real-time systems tools have evolved to meet that challenge, providing a range of solutions that meet the needs of OEMs adapting to market challenges.

Curtis Campbell is SigmaTron International's Vice President of Sales. He can be reached at curtis.campbell@sigmatronintl.com. For more information on SigmaTron International's capabilities, visit www.sigmatronintl.com or call 510-477-5004.