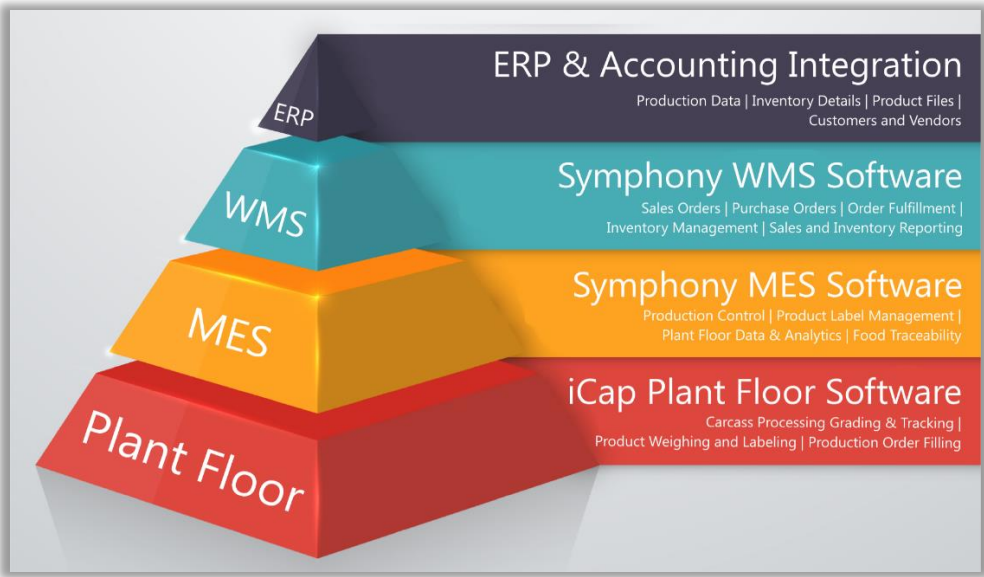


Optimize food plant operations by integrating Symphony MES with your ERP system

The popularity of ERP systems in the manufacturing world seems to be ever increasing. In a day and age when data equates to dollars the more relevant data that can be generated the better. Larger food processors dedicate full-time staff to maintain, collect, and analyse data coming into their ERP systems. A good ERP system will enable a food processing plant to take an in depth look at their processes in order to maximize their efficiencies and streamline the flow of production.

With all the emphasis on collecting data it begs the question, how can an ERP system effectively send and receive production data to and from the plant-floor? ERP systems don't normally integrate well with plant-floor hardware like scales or other data collection devices. Symphony MES can be the bridge between the ERP system and the plant-floor. With seamless integration to the plant-floor Symphony MES augments the standard ERP system.

Symphony MES was designed to give complete control of the plant-floor to the ERP user. For example, through Symphony MES the user can create and edit production orders, product files, label formats, tare weights, and more. Communication between Symphony MES and the production facility's ERP system allows Symphony MES to receive production orders from the host ERP system. Symphony MES then sends the orders to the scales on the plant-floor where the orders are received by the iCap Production Order Filling application. Operators use iCap Production Order Filling to fill orders by weighing and labeling product. Once product has been labeled those transactions are sent back to the host ERP system through Symphony's MES database.



With Symphony MES and ERP integration plant floor operations can be optimized through better automation, increased productivity, improved communication and enhanced traceability.

Benefits of Integration

Most ERP systems have slowly evolved into becoming a *Jack of all Trades*. ERP systems cover a large territory including inventory, manufacturing, order management and fulfillment, accounting, HR and customer relationship management (CRM). While it is great to have one system manage so much, it can be difficult for those systems to provide depth in all those areas. Integrating with Symphony MES allows a plant's ERP system to focus on what it does best, while allowing Symphony MES to handle the plant-floor weighing, labeling, and data-collection. Simply put, Symphony MES was built for the plant-floor. It's robust architecture was designed to communicate directly to plant-floor equipment.

Role of Symphony MES on the Plant-Floor

There are no two food processing plants that are the same. The food processing industry is diverse, and every plant floor is different. Therefore, to meet the many different needs in the food industry Symphony MES was built with a modular design to cover as large or small of a foot print as required. What does this look like in the various parts of a food processing plant?

Abattoir Facilities: Symphony MES is located on the plant-floor in some of the largest processing plants in the U.S. and Canada. Symphony MES paired with the iCap Harvest Floor application integrates directly with multiple plant data-collection components such as, trolley identification systems (Trolley Vision®), fat probes (AutoFom™ or Fat-O-Meter), RFID Technology, and High Accuracy Monorail Systems. Symphony MES provides full carcass tracking and carcass yield data-collection throughout the entire kill process. Production data is collected and reported back into the host ERP system.

Piece or Raw Product Weighing and Labeling: Symphony MES paired with iCap Piece / Combo Weighing integrates together carton and combo scales along with printers, scanners, and HMI's. Symphony MES receives orders, weighs and labels pieces or combos with serialized GS1 labels, and links serialized product back to original batch or lot numbers. Production data is then sent back to the host ERP system through Symphony MES.

Finished Goods Weighing and Labeling: Whether finished goods are weighed and labeled in-motion on a conveyor or manually, Symphony MES and iCap Production Order Filling communicates directly to scales (both static and conveyor scales), printers (automated print and apply systems or industrial label printers), scanners (fixed in-line scanners or handheld scanners) and HMI's to fill production orders by weighing and labeling finished goods cartons with serialized GS1 labels. Finished goods production data is sent back to the host ERP system through Symphony MES.

Enhance Data Accuracy and Reduce Errors

By seamlessly integrating with existing plant ERP systems Symphony's MES eliminates double data entry and the associated errors. Automate the sending and receiving of product files, production data, inventory details, and customer/vendor information between Symphony MES and the host ERP.

Symphony MES works in conjunction with the iCap Production Order Filling application. iCap was designed to receive production orders from the host ERP system through Symphony's MES and fill those production orders. On the plant-floor, iCap reduces errors by removing the complexity for plant-floor

operators. Touch friendly applications allow operators to select jobs or products to work with. Scanners remove the need for manual data entry. Onscreen prompts guide operators through their next steps. Or simply automate the entire process with iCap's operator free automated weighing and labeling solution.

Boost Productivity

Symphony MES provides real-time visibility by offering production goal-setting, production dashboards and reports. Visibility into plant-floor production gives management the tools necessary to boost production and improve product throughput. Set production goals and produce against those goals with Symphony MES Goal Setting. Production dashboards allow staff to visualize their progress against the set production goals. Designate multiple lines to fill the same order to help expedite certain orders. View production reports either directly on the plant-floor or up in the office.

Augment ERP Traceability

The question isn't whether an ERP system can provide quality traceability. The bigger problem is extending the ERP system's traceability to the plant-floor. Symphony MES lot tracking allows product to be weighed and labeled against lot numbers received from the host ERP system. Serialized product labels provide traceability down to the individual piece if required. Detailed traceability reporting can be viewed in Symphony MES or in the host ERP system. Symphony MES is key in helping food processing plants fully complete the traceability chain. With Symphony MES the processor has insight into where product came from, what product manipulations were made during production, and where that product was sent.

Symphony MES and iCap Production Order Filling Application

ERP Integration

Every plant is unique; therefore, every integration is tailored to fit the individual plant's needs. Some plants will rely more heavily on their ERP system and only need Symphony MES to handle the plant-floor weighing and labeling. Other plant's might want to implement a more complete Symphony system that includes Warehouse Management as well as MES functionality. Symphony is flexible and can be tailored to provide as much functionality as required. See the diagram below for a basic ERP integration model.

iCap Production Order Filling Application

iCap Production Order Filling was designed to receive finished goods production orders from the host ERP system through Symphony's MES and fill those production orders. This can be done on manual weighing and labeling stations or can be fully automated.

Manual Order Filling: Operators open the Order Filling application and are presented with an entire list of the current orders that need to be filled. Operator(s) select an order to work on and begin weighing and labeling the associated product. Production orders can either be filled in batches of product with the same PLU or they can be filled with mixed PLUs. Once an order is filled it will close automatically and another order can be selected. Multiple production lines can be working on the same order at the same time. Office personal can view the progress of orders being filled.

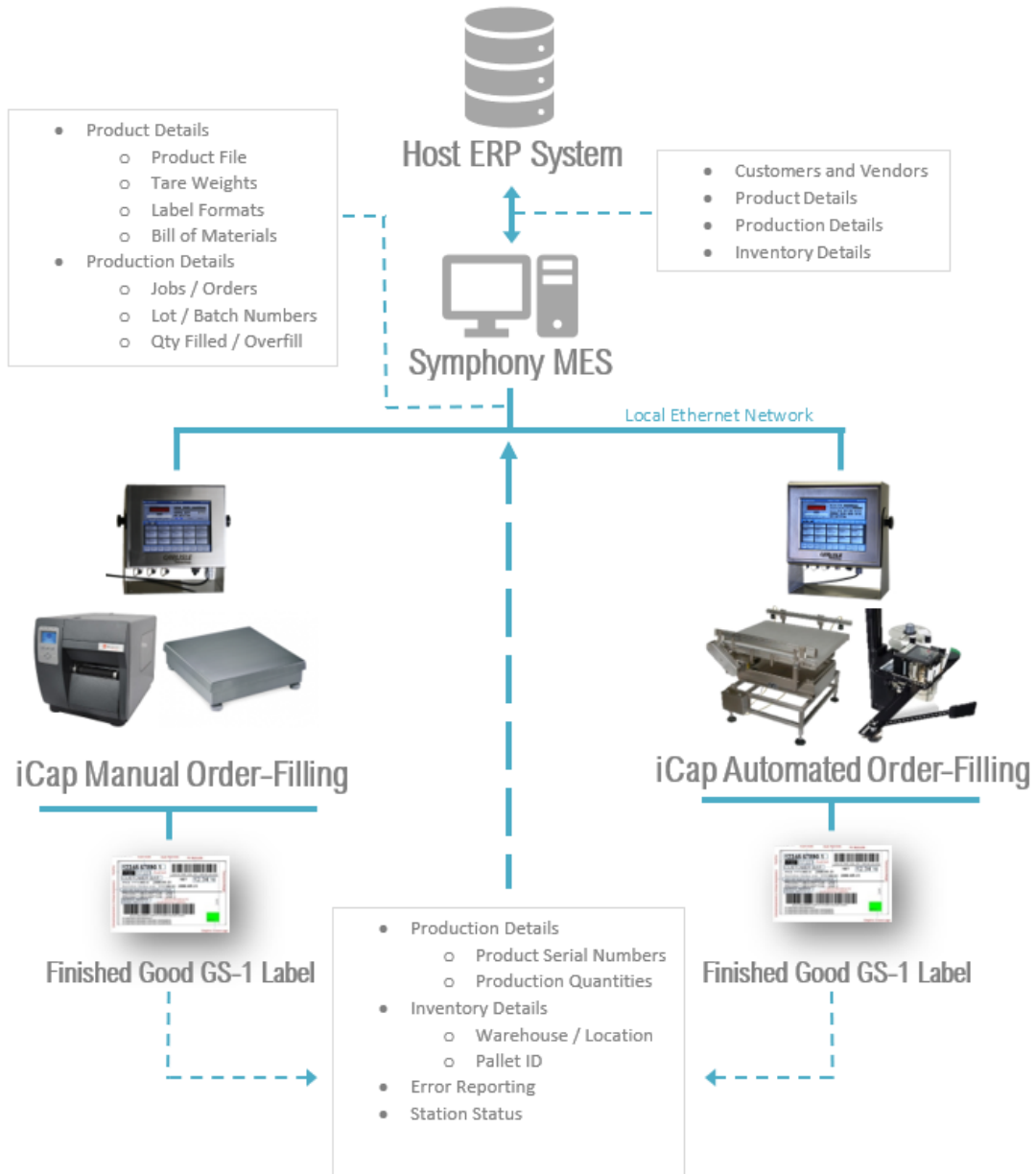
Automated Order Filling: Was designed to automate the finished goods weighing and labeling process. This reduces the number of operators required on the production line. Finished goods cartons travel down a conveyor line towards an iCap station with a conveyor scale. Product can be fed onto the scale in batches of the same PLU. If product is mixed, then an inbound scanner can scan incoming PLU labels on the cartons and iCap will automatically select which PLU will be weighed based on the scanned incoming PLU label. Cartons travel over the scale to capture the product weight and a finished goods label is then applied with an automatic label applicator.

Production Friendly Architecture:

Both Symphony MES and iCap use Microsoft® SQL Server as a database platform. With production demands in mind iCap was designed as a thick client application. That means it doesn't matter if the network goes down or connectivity between iCap and Symphony MES is cut. Local iCap production can continue without interruption. iCap stores all the production data in it's local SQL database and reconciles missing data once the connection to Symphony MES is reestablished.

See next page for Basic ERP Integration Model

Basic ERP Integration Model



Keys to Successful ERP Integration

The importance of ERP and MES integration in the food processing industry is undeniable. It is responsible for improving efficiency, traceability, and meeting the evolving customer demands. Successful integration depends on a few key technical and human factors.

Establish Project Scope and Goals: Symphony is extremely flexible and able to provide functionality that goes far beyond typical plant MES systems. With Symphony's flexibility it's important to have a clear understanding of the ERP integration goals. What are the pain points that need to be addressed? What problem will Symphony solve for the plant? Establishing clear goals from the very beginning will help establish which system the plant will rely on for certain functionality. From there a clear and well-defined scope can be established.

Understand the Involvement Required: An ERP/MES integration is designed to streamline the flow of information from the plant-floor to the front office. This will ultimately help plant operations increase efficiency. It will also enable the plant to make larger business decisions based on the information provided by the MES. This however takes a lot of work upfront. Which system will be the master over which information? Who will help make decisions around data mapping between databases? Finally, testing is always required to make sure information is flowing freely between systems. Prepare ahead of time and establish a team or a project champion that will be dedicated to helping implement this solution.

Get Support and Buy-in from Plant Operators and Management Teams: Implementing a plant MES solution requires a large effort from the plant's implementation team. Getting buy-in from the top management levels all the way down to the plant-floor operators is key to successfully implementing any large-scale plant solution. Having a project champion that can carry the burden of managing project details, delegating tasks, and updating plant management on key milestones will build momentum and help keep the project on track.

Choose Experience: When it comes to complex plant-floor solutions, experience is key. With over 30 years of plant-floor experience other MES solutions can't compete with Symphony MES. Carlisle Technology has been serving the North American food industry in plants of all sizes; from some of the largest processing facilities in North America down to the small independent processor. Over the years Symphony MES has integrated with many ERP and Accounting programs. The flexibility of Symphony MES allows integration with common ERP vendors such as SAP and ROSS ERP, or Symphony MES can integrate with in-house ERP solutions. Symphony MES has the experience to ensure a smooth and seamless integration!

Partner with Carlisle Technology

Carlisle Technology sees the importance of pushing past the typical customer/vendor relationship. We believe it is important to create a partnership with our customers. One of the biggest differentiators that separates Carlisle Technology from other solution providers is that we are committed to supporting our customers long after the implementation is over. We strive to keep the systems that we provide up and running reliably for years to come. Partner with Carlisle Technology and let us help extend your ERP system to the plant-floor.

*Andy Cumpton – Senior Account Manager and Marketing Specialist
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