Microsoft Dynamics 365 ERP Cloud to Device

Moving ERP to the cloud and maintaining the ability for production to continue if the connection to the ERP system is lost.

$1MM/day
lost revenue savings
(event disruption mitigation)

$100Ks
in savings
(system upgrade costs)

Expansion and flexibility added to ERP capabilities

Technologies

Microsoft Dynamics® 365

GE

Algood Food Company

🛒 **Food & Beverage**   📍 **USA**

HIGHLIGHTS

Challenge

While moving the ERP system to the cloud, the wanted their **automated MES system to continue functioning without disruption to production** (in the event of a 2-3 day short-term connection loss)

Solution

A **production database and webservices was created to map current schedules, inventories, BOMs, etc. to a "sustainability" data structure** that the MES system and other Plant Floor systems could operate for 2-3 days if ERP connection was lost
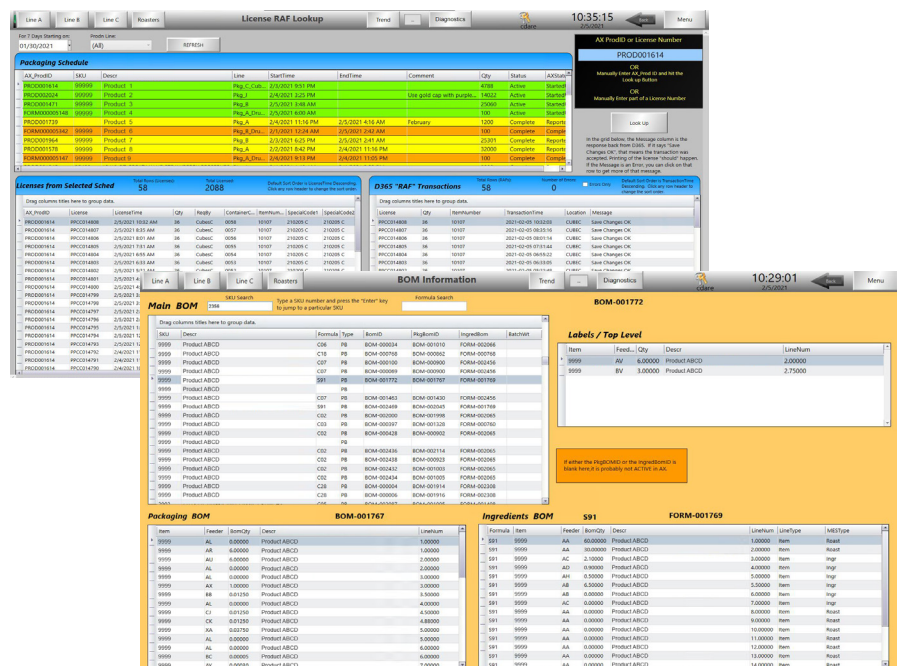
Results

Implemented system would save **almost $1MM a day in lost revenue** for any event with a disrupted connection to the cloud. **Several $100K of savings realized** for regularly scheduled ERP system updates. With the help of INS3, this was an absolute requirement of the ERP system that was delivered.

The Company

Algood Food Company and INS3 have had a long-time relationship where the focus was about delivering business value using real-time data to give insights into manufacturing. Often referred to as Manufacturing Intelligence, it is also the roots of Manufacturing 4.0.

The collaborative journey between both companies started over 10 years ago with basic data collection, shifting into warehousing, track and trace, Enterprise Resource Planning (ERP) system integration, and more. Prior to Algood's decision to move to the cloud-based Dynamics 365 ERP, the system was able to take orders, Bill of Materials (BOM), and inventories down from ERP system and report finished product and consumption back up to the ERP and the Warehouse Management System (WMS).

After the decision was made to move to the cloud-based D365 ERP systtem, they also wanted to move their Warehouse Management System into D365 from a third-party solution. Algood had a fully functional MES in place that was fully integrated in real-time with the on-premise ERP and Warehouse system.

The Challenge

While Algood decided they wanted to move to a cloud-based ERP System, there were concerns about the ability to run their highly automated production environment if:

• The cloud was unavailable

• Connectivity issues occurred

• Planned outages for their 24/7 operations

Algood brought in their ERP vendor and INS3 to address the concerns and to start designing the system. During their working sessions, INS suggested implementing a production database that could several days of full operational data (Production Orders, BOMs, Formulas, Inventory with Lot Information, etc.) locally at the plant above the MES system. Additionally, suggested was development for a webservice which would synchronize the data and communicate transaction up and down from the ERP to the MES system for execution on the plant floor; allowing the plant to have the capability to run for several days with no connection to the ERP.

Our Solution

MES functions were added to adjust (such as move an order up in the queue, allow ingredient substitutions) as needed, all while maintaining full genealogy. The project execution had many other challenges around new ways of formatting BOMs, a new warehouse system, and some new services in place, which required substantial testing prior to going live. Coupled with the fact that this all took place during the COVID-19 pandemic, it added additional complications of everyone being remote.
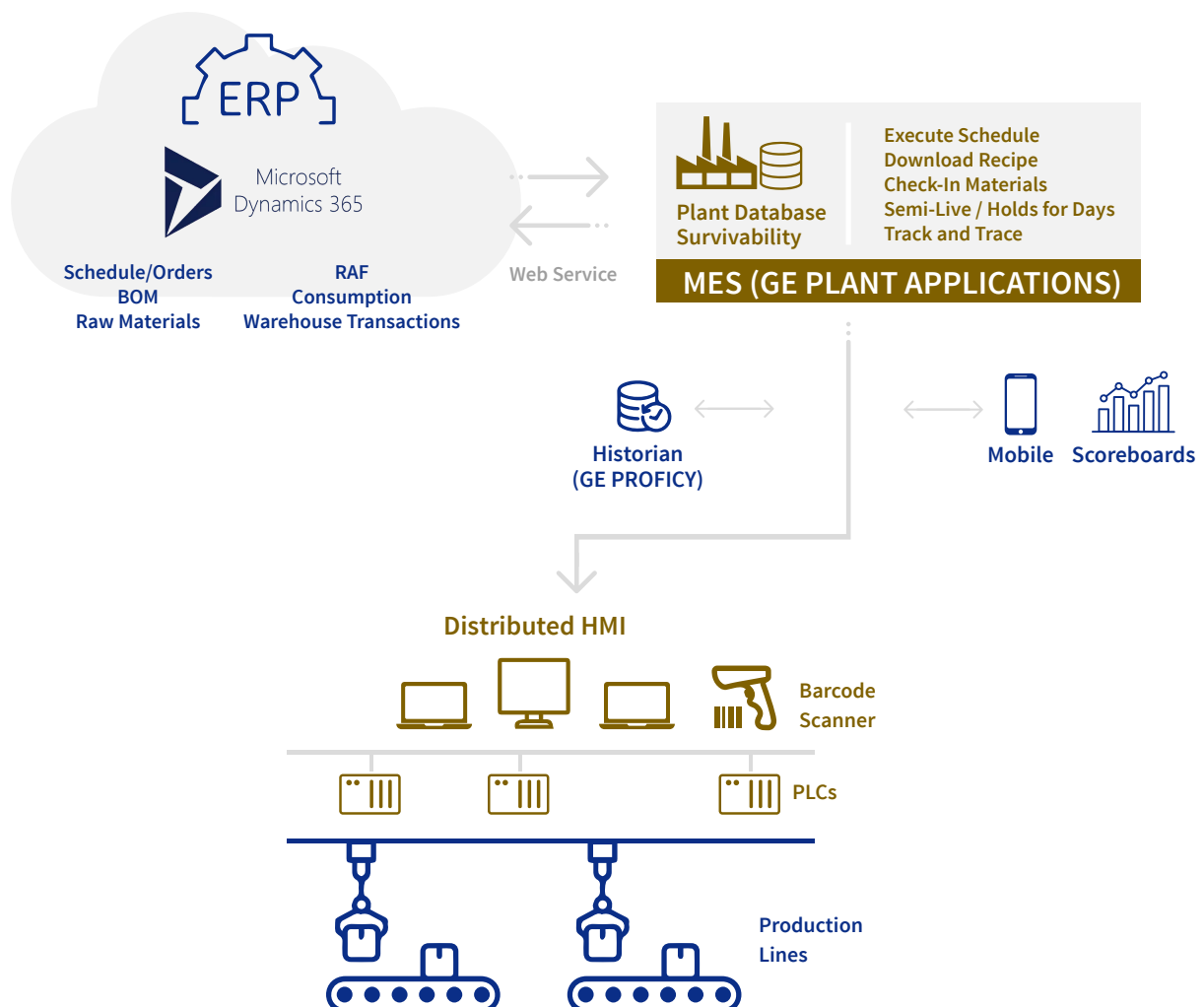
EDI orders came in from customers and relayed to the cloud. Forecast production plans with BOM and raw material inventories were pushed to production. The MES system consumed raw materials, tracked process, maintained product quality, and produced finished goods. The MES would send actual consumption information, process information (including metrics like OEE), and finished goods back to the cloud.

The MES consumed actual usage of raw material from the warehouse system and gave finished good licenses to the warehouse with track and trace to give the plant genealogy for recall containment and other functions. Quality, Maintenance and many other systems were also integrated into the architecture.

> **One of the risks of moving ERP to the cloud is at times it will be unavailable for maintenance or other issues. INS Survivability Database enables us to run production during any of these losses of connection to ERP, which is a requirement for a 24/7 facility.**
>
> *- Kelly Forbes, Vice President of Operations*

Results

With the requirements of the cloud implementation realized, Algood was able to avoid loss of revenue from lost connection to the ERP. This cost savings translated to $1MM/day in the event of disruption. Algood production could fully operate in the absence of this connectivity.

Additionally, they avoided several hundred thousand dollars of cost for regularly scheduled ERP system updates due to the implementation in effect.

💡 *INS3 Tip*

Not sure where to start? Start by collecting the time and event series data. Analytics run best with a lot of correlated data and you never know the variable that will be the most important. Or if you've got questions, let us help.

About Us

30+ **years in business** helping our customers solve efficiency, quality and cost control problems.

450+ **completed projects** in different industries like Food and Beverage, Consumer Packaged Goods, Manufacturing and Industrial.

300+ **years of combined experience** in our Senior Staff, and hundreds more with our team of engineers.