

# Helping Global Food Manufacturer Achieve the Perfect Blend

Their World Runs on Oil – Vegetable, Sunflower, Corn and Soybean.  
The Challenge: Blending Them Precisely to Maintain Product Integrity and Taste While Getting the Right Amounts of These Commodities at the Right Price

## Solutions

Rockwell Automation SSB Team

- Conceived control algorithms for accurately blending oils and using an in-line blending system for multiple facilities across the U.S.
- Delivered the blending control system and teamed up with Polytron/E2M to assist in managing the implementation at each site

Multiple Phase Project

- Second phase of the project called for implementation of a skid mounted, in-line blending system at multiple additional facilities
- In addition, due to the flexible nature of the system, the customer could adjust the blends to take advantage of changes in commodity pricing for oils

## Results

Significant Contributions

- The collaboration between the Rockwell Automation SSB Team and Polytron, Inc./E2M, helped deliver on-time deployment of each phase of the rollout

Results as Anticipated

- Minimized interruptions of production
- Successful collaboration between the Rockwell SSB Team, Polytron/E2M and the food manufacturer identified the pros and cons of all options and helped ensure that the project's requirements were met
- Low capital investment, high accuracy and short lead-time – while maintaining the highest level of product quality

Solution Provider Partner



## Background

The world runs on oil. For this global snack food manufacturer, that oil is cooking oil – vegetable, sunflower, corn, soybean, and combinations of these. The challenge: mixing these in just the right way to maintain product integrity and taste while getting the right amounts of these commodities at the right price.

In its quest to manage fluctuating commodity costs and maintain recipe quality control, the customer wanted to install a new blending system. Rockwell Automation and PartnerNetwork™ Solutions Providers Polytron/E2M were instrumental in getting the new system designed and installed with minimal production disruption.

LISTEN.  
THINK.  
SOLVE.

## Controlling Costs

Due to fluctuating commodity prices, the customer was experiencing high costs for selected oils. Fortunately, their ingredient profile allowed them to use multiple oils – or blended oils – in the manufacturing of their products.

Not all suppliers process all oils, so pre-blending required a double handling of at least one oil; shipping it from one processing site to another for blending; then shipment to manufacturing sites. While this model was possible, it increased the cost of the oil and extended the delivery time of the blended oil to the targeted manufacturing plant.

The customer had a relationship with Rockwell Automation and approached Michael Hopper, PMP, MCP, program manager, with its challenges, including:

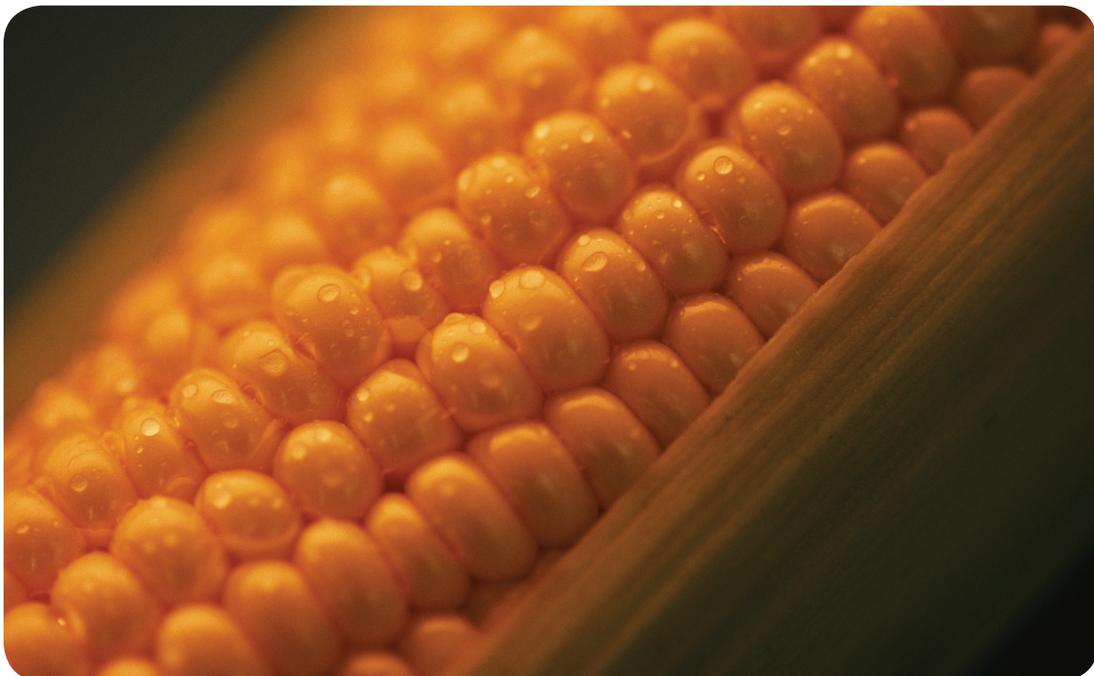
- **Blend ratio:** Solution must provide precise controls to meet nutritional statements on the food packaging. The product must taste right and the solution had to provide flexibility to leverage variability of supply and cost of oils
- **Minimize effect to production efficiency:** Solution must be transparent to the existing oil supply system controls and process controls. Any installation downtime window must fit within current production schedules
- **Maintain oil quality:** There could be no degradation of the oil through the new blending system

For the initial phase of the project, the Rockwell Automation team conceived control algorithms for accurately blending oils and using an in-line blending system for 18 facilities across the U.S.

“We have the capability to deliver the blending control system, and called on Polytron/E2M to assist in managing the implementation at each site, including equipment supply, mechanical and electrical support, and construction management,” explained Mike. “Polytron/E2M also worked with the project team to take information gathered from each site and develop construction and implementation plans.”

*For the initial phase of the project, the Rockwell Automation team conceived control algorithms for accurately blending oils and using an in-line blending system for 18 facilities across the U.S.*

A second phase of the project called for implementation of a skid mounted, in-line blending system at 17 additional facilities. When installed the system would allow the customer to blend oils from their existing oil storage systems at highly accurate ratios. In addition, due to the flexible nature of the system, the customer could adjust the blends to take advantage of changes in commodity pricing for oils.



# Process Systems

PROCESS FLOW  
DIAGRAMS

PIPING &  
INSTRUMENTATION  
DIAGRAMS

MASS BALANCE

PROCESS EQUIPMENT  
SPECIFICATIONS

ISOMETRIC PIPING  
DIAGRAMS

BATCH, CONTINUOUS &  
ADVANCED PROCESS  
CONTROL

CONTROL PANEL DESIGN  
& SUPPLY

SCADA EMULATION &  
FACTORY ACCEPTANCE  
TESTING

## Confidence: From Inception to Construction

- DOES YOUR COMPANY HAVE ONE POINT OF CONTACT FOR FULL MANAGEMENT OF ALL PROCESS, UTILITIES AND SITE MANAGEMENT NEEDS?
- DOES YOUR VENDOR OR PROVIDER HAVE A DETAILED UNDERSTANDING OF PROCESS SYSTEMS AND HOW THOSE FUNCTIONS ARE INTEGRATED INTO AN OVERALL MANUFACTURING SYSTEM?
- DO YOU HAVE THE RIGHT TOOLS TO DEVELOP A CONCEPTUAL OR DEFINITION PLAN THAT CAN SUPPORT THE JUSTIFICATION OF YOUR CAPITAL PROJECT?

You want certified engineering experience that you can trust – especially when you're relying on one point of contact for full management of all process, utilities and site management needs.

From inception and design to construction, process system design and recipe control, we are your trusted partner for custom and standard solutions in the Food and Beverage, Consumer Packaged Goods and other major industries.

Polytron has our clients' confidence because of our detailed understanding of Process & Utilities and how those functions are integrated into overall manufacturing systems and plants.

Among our differentiated service is our ability to deliver Vertical Startup for your process system; validate and test processes virtually; deliver flexibility and improved throughput; and increase efficiencies while reducing waste and costs.



### Affiliations & Certifications



## Roll Out

Adding to the complexity of the project was that the systems needed to be rolled out to 27 sites all over the U.S. – often on successive weekends. Polytron/E2M used three implementation teams so people were constantly preparing for, performing and following up on start-ups at different facilities.

The final challenge was training maintenance and operations people at 27 sites on the use and care of the new blend systems. Polytron/E2M worked with Rockwell Automation and the customer to develop a training program, documentation, and rollout plan.

The systems were rolled out in approximately 14 months. Production sites were started on time, minimizing planned production interruptions, and meeting the customer's need for low capital investment, high accuracy and short lead-time – while maintaining the highest level of product quality.

"Through our PartnerNetwork we are able to get the expertise needed to deploy the type of system our customer needed," said Mike. "With an aggressive rollout schedule, we needed proven partners with capabilities that complemented ours. Because of their ability to deploy resources so efficiently and effectively, we did not miss a single installation deadline or have a major delay of any start up."

***"Through our PartnerNetwork we are able to get the expertise needed to deploy the type of system our customer needed"***

"This is one of our areas of expertise, deploying teams with specific skills where the customer needs us, when they need us," said Brent W. Stromwall, PE, PMP, vice president, Polytron.

"It helps to have partners who are so agile," added Mike. "We needed them to execute this project and minimize the risk of delaying a start up and causing unforeseen downtime for the customer."

"When we work as partners we make it seamless to the customer," said Keith Perkey, PMP, account manager, E2M. "All three of our companies had representatives on the phone at least weekly, discussing resource plans, tools and ideas."

"We've had a relationship with Rockwell Automation for years," said Brent. "Through the PartnerNetwork we have worked through all of the relationship-building aspects of our partnership, so we know each other's expectations and what each company can bring to the table to benefit the customer. For example, our annual PartnerNetwork Conference keeps us connected on a whole other level, helping us develop and maintain a comfort level and trust in one another."

"This win positions us well for future work with the customer," said Mike. "The feedback was extremely positive and because this is such a valuable and financially profitable project for them – with little downtime – we expect that as the economy continues to improve we will uncover other opportunities."

*The results mentioned above are specific to Polytron's use of Rockwell Automation products and services in conjunction with other products. Specific results may vary for other customers.*



Rockwell Automation and PartnerNetwork companies collaborate to help you develop an ongoing approach to plant-wide optimization, improve your machine performance and achieve your sustainability objectives.

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***Polytron, based north of Atlanta, Georgia helps customers engineer and operate with manufacturing excellence. Since our founding in 1983, we have applied our project management and engineering expertise in thousands of engagements with many of the world's largest Food, Beverage, and Consumer Products companies. Our expertise in Manufacturing Intelligence, Automation Systems, Power Distribution, and Training provides our customers with application solutions that help them meet their business objectives while reducing risk and improving overall performance.***

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