

VALUE PROPOSITION

BEVERAGE

SOLUTIONS

Rockwell Software® Arena® simulation software

- Models a system to create an initial design concept
- Simulation training course from Rockwell Automation consultants
- On-site technical support from industry experts

RESULTS

Saved \$150,000

- Eliminated need for third wrapper, saving PepsiAmericas \$150,000

Improved communication

- Proven solution helped more effectively communicate system needs to management

Reduced downtime

- Simulating production environment prior to runtime prevented downtime and bottlenecks during all phases of production

PEPSIAMERICAS SAVES \$150,000 WITH SYSTEM ANALYSIS TECHNOLOGY FROM ROCKWELL AUTOMATION



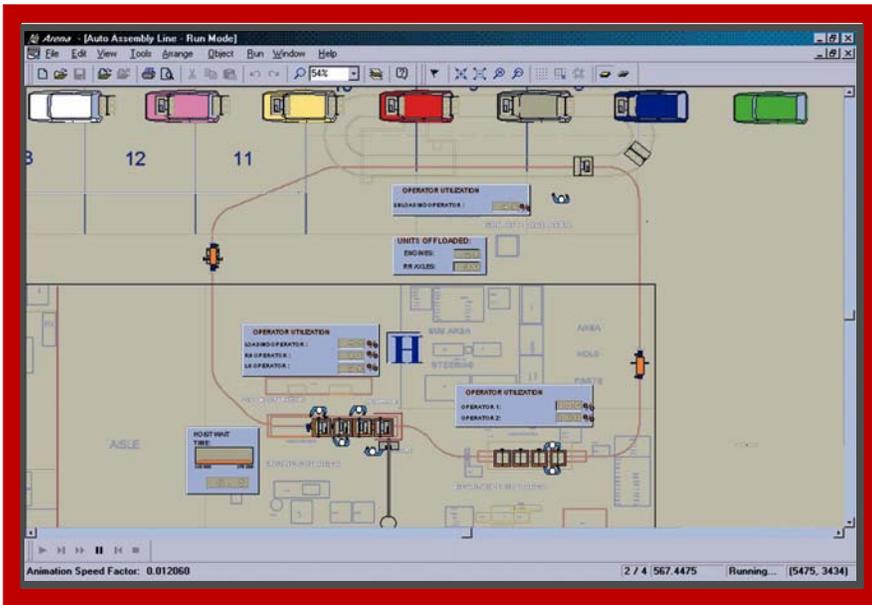
The PepsiAmericas facility in Des Moines, Iowa makes more than 45 brands of Pepsi-Cola products and distributes them throughout the Midwest. In a single day, the plant produces nearly 60,000 cases of soft drinks, totaling more than 20 million cases annually.

BACKGROUND

PepsiAmericas Inc. is the second largest canning and bottling group within the Pepsi organization. With operations in nine countries worldwide, the company manufactures and distributes Pepsi-Cola® products to more than 122 million people. Its facilities produce more than 100 different beverage flavors, including national and regional beverage brands.

The PepsiAmericas facility in Austin, Ind., is one of the company's 19 U.S. beverage production and bottling plants. It produces a variety of Pepsi-Cola products and packages them for distribution throughout the Midwest.

Like all beverage manufacturers, the Austin PepsiAmericas plant strives for the consistent quality, freshness and taste that customers



The Rockwell Software® Arena® simulation software helped PepsiAmericas model their production system to identify production issues, pinpoint problems and prevent downtime events.

expect from all Pepsi-Cola products. At the same time, retailers, government regulators and changing consumer preferences place increased demands on the plant's ability to remain flexible, responsive and cost-efficient.

CHALLENGE

Production at the Austin facility begins as bottles and cans are fed into lines where they are filled and sent to a full-pallet conveyor system. The beverages leave the fillers and make their way to the system's five palletizers to be palletized. From there, they are moved by multiple conveyor lines to one of two stretch wrappers. Each pallet is wrapped for distribution and moved by forklift trucks to the warehouse for shipping.

To keep up with ever-changing consumer preferences and an increased demand for new products and flavors, PepsiAmericas added another bottling line at the beginning of the production process to help boost

throughput. Products from the new line feed into the full-pallet conveyor system, merging with those from the other fillers. The additional system helped increase filler production; however, the added volume began to cause backups in the full-pallet conveyor system, resulting in increased stretch wrapper downtime and reduced efficiency. These production bottlenecks began to drive up labor costs and prevented PepsiAmericas from meeting its high throughput goals.

An initial review of the operation helped PepsiAmericas conclude that adding a third wrapping machine at the end of the system would solve the bottleneck problem by reducing the number of product jams when multiple lines merged into the full-pallet conveyor system. However, before purchasing the expensive equipment, PepsiAmericas wanted to perform a quantitative analysis of the system to make sure that the additional wrapper would eliminate the backups.

SOLUTION

To get a clear visualization of the operation with an additional stretch wrapper in place, PepsiAmericas turned to technology partner Rockwell Automation. The company wanted to reduce the risk of the unknown and create a "picture" of success with the new equipment. Using Rockwell Software® Arena® simulation software, a tool that helps companies model new or existing systems to better understand how they work, PepsiAmericas could create an initial design concept prior to installation. The company could then use the Arena software to calculate the many variables that can occur in the process during production. PepsiAmericas chose Arena software because of its sound reputation in the simulation market and relied on Rockwell Automation for its analysis expertise and its knowledge of the unique challenges beverage manufacturers face.

The project was divided into two phases. The first phase included a two-day simulation training course for PepsiAmericas engineers. As part of the training, the engineers learned how to create a detailed layout of the full-pallet conveyor system. After completing the course, Rockwell Automation consultants helped the engineers develop an interactive model of the system. This model allowed the team to view a simulation of the process, review controller programming code and examine production data under different variables.

The animation allowed the engineers to view and manipulate the system under a variety of conditions. The team was able to run the model with different

scenarios using production variables such as flow rates, product volume and conveyor speeds. With each scenario, the team could evaluate system efficiency based on the output from the Arena software.

The model allowed PepsiAmericas engineers to better understand the system, from bottling line to stretch wrapper, and identify the process problems causing the backups. By replicating the scenarios numerous times over, the team was able to confidently recommend a solution to management.

RESULTS

Through a series of simulations, PepsiAmericas discovered that by changing a portion of the controller programming code that governed the pallet movement from the five palletizers to the two stretch wrappers, it could eliminate the backups and accommodate the additional volume. There was no need to purchase and install a third stretch wrapper, which ultimately saved the company \$150,000.

Within two months of embarking on the project, the Rockwell Automation simulation solution helped the team visualize and model the full-pallet conveyor system. This enabled the team to justify its solution and communicate recommendations more effectively to management. It also helped the team better define the logical processes of the system and its controller programming code.



Production lines typically run 120 hours each week. At the heart are Rockwell Automation control systems, which govern automated production from the unloading of empty cans and bottles to packaging.

By working with Rockwell Automation to simulate the application, PepsiAmericas was able to evaluate upstream process conditions to improve traffic control, reduce system downtime and achieve optimum efficiency. In addition, it helped PepsiAmericas take advantage of simulation technology, which the company plans to use for future modeling projects.

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

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