

Digital Automation Doubles Production, Improves Quality for Coffee Maker Real Café

RESULTS

- 84% Increased plant capacity & productivity
- 60% Reduced re-process time
- Increased product quality, uniformity
- Improved maintenance & documentation
- Reduced configuration, implementation costs
- Reduced operator training cost
- Increased process reliability

APPLICATION

Coffee roasting and milling

CUSTOMER

Real Café is one of Brazil's largest manufacturers of instant coffee, and a leading producer of roasted and milled coffee, exporting to customers worldwide.

CHALLENGE

As in the wine industry, the aroma, taste, and product consistency are key factors in a coffee maker's product, and major influencers in customer purchasing decisions. Controlling these production parameters is only possible with the complete automation of the process. So with its plant expansion, Real Café seized the opportunity to modernize and automate its process.

SOLUTION

The coffee maker found the vehicle to maximize this opportunity in the DeltaV™ digital automation system from Emerson Process Management, after the local representative performed a process variability analysis, quantifying the returns Real Café could expect on proposed process improvements.

Installing the automation system presented its own challenge to an industry that couldn't afford to shut down or even reduce its process in order to fulfill customer orders. The digital automation system, designed to work with bus technologies, made the transition possible. Maintenance and projects manager Isaias Estevan Dal Piaz says the



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Edson Antonio Gualtieri

Automation Manager, Real Café,
Espírito Santo, Brazil



For more information:
www.EmersonProcess.com/DeltaV



network technologies such as Fieldbus and DeviceNet, enabled easy configuration and fast implementation. Plant managers and operators were able to learn how to operate the system while developing several steps of the project. Says Dal Piaz, “From the first application that we performed with DeltaV, we noticed the ease of learning and of implementation of the project becoming very modular.”

Automation manager Edson Antonio Gualtieri says he is very confident that his operators were adequately trained. “It’s pretty easy to catch on,” he says. “The operators like the process a lot because it has brought them more reliability.” Adds Real Café’s executive vice president Raimundo de Paula Soares Filho, “The system is so simple that I could train my own system analysts and engineers. I use Emerson’s services to design what kind of instrument or valve to use; or to tell me what kind of card I need for the automation of a certain phase of the process. All the development, commissioning, implementation, and software design is done by my team internally.”

Delivering Results

Says Filho, “One of the key benefits of the process automation was to allow Real Café, to double plant output without hiring any additional people.”

Process consistency added substantially to throughput by reducing the amount of re-processing. “Last quarter,” says Filho, “we had a decrease in ‘rework’ from around 5% down to 2%, which is a substantial productivity gain”.

The automation system also produced a more uniform quality product. Says Filho, “I have 4 different work shifts; and under manual operation you had to deal with an average quality; there was no absolute uniform quality throughout a long continuous production run. Today I have that uniformity.” Says Gualtieri, “Since the automation system’s installation, we get almost no variation; no out-of-spec product, because during the process, the machine cycle system develops easily, so on the final product, you don’t find variations. The quality improved a lot; that brought product uniformity and this uniformity translated into benefits for the whole company.

And with the digital system’s optimization and analysis tools, Real Café could easily maintain and document its product uniformity.

“The DeltaV Tune, software is very easy to use,” says Filho. “Its responses are well accepted by the process and downloading tuning variables is very simple. It really made the process improvement easier. All the commissioning and startup work was simplified with DeltaV Tune.”

Says Gualtieri, “It’s very easy because you have an on-line diagnostic, therefore, at any moment, any problem gets registered in the system, turning it into historical data that you can evaluate.”

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Maintenance and Projects Manager, Real Café,
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Real Café uses the historical data in part as an audit trail for customers, who want to know specifics of the process during production of their coffee order. Also, the enriched process information and documentation enables Real Café to more easily meet industry production standards, such as ISO, and HCCP.

Transition to Total Process Automation

Real Café plans to include the digital automation system in any future expansion plans including a freeze-dried coffee plant. Filho says that while today 80% of the plant is automated, he expects to have it 100% automated by the end of the year. “So far,” he says, “the investment has been economically feasible, it has a good value, and the payback is amazing.”



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