

The success story of Amul Keeping the world's largest milk cooperative healthy

ABB automation and control systems ensure uninterrupted processing of more than a billion liters of milk... and counting

A partnership between Amul, the world's largest dairy cooperative, and the knowledge and experience of ABB is helping India's farmers keep pace with accelerating demand for milk products that have been a force in improving quality of life and boosting rural economic growth for decades.

Amul, based in western India, has lifted its capacity to about 14 million liters daily, up significantly in just a few years. That's providing opportunity for the cooperative's three million milk producers to lift output and meet increasing demand for healthy, nutritious food.

Farmers come to deposit milk. Source: World Bank Report Amul's challenge is preserving millions of liters of perishable milk in a hot tropical country collected from dispersed villages and households. This requires intensive logistics planning to gather milk, after which ABB's advanced automation keeps Amul's operations running smoothly - and lays the groundwork for future growth.

ABB was initially brought in six years ago to upgrade automation and control systems at Amul's Dairy III at Anand, Gujarat. Not only was there minimal downtime for Amul's operations amid the transition to ABB's 800xA control systems, but the systems' adaptability ensured the cooperative's expansion in 2012 and 2013 was seamless, keeping precious milk from going to waste.

"Amul has championed the application of leading edge technologies," said T R Ravishankar, ABB's Control Technologies Business Unit Manager. "The successful deployment of our flexible solutions in 2008, with a good track record, led Amul to opt for more ABB solutions as it expanded."



Co-op inspired India's 'White Revolution'

Amul has a storied history, having been created in 1946 in response to the exploitation of marginal milk producers by traders from what was then the region's only dairy.

Its work inspired India's "White Revolution," improving lives of rural families and providing a livelihood for marginal farmers or families with two milk animals or less, as well as the landless.

The unfailing perseverance of leaders like Dr. Verghese Kurien, its first chief executive officer, and H. M. Dalaya, who helped spur its technological innovations, turned Amul into the co-op it is today, with an annual turnover of more than \$3 billion.

Located in India's "Milk Capital," Amul has helped the country become the world's No. 1 milk producer, with production doubling to some 130 million tons annually over the last two decades.

Rapid growth requires technology embrace

With rapid growth, however, the cooperative's embrace of technology has been key to successful aggregation, processing and distribution of a time-sensitive item like milk after it's collected from so many producers.

That's where ABB comes in: Its 800xA control systems, relied upon broadly in industries including food and beverage, oil and gas and mining, provide Amul with intuitive automation and maintenance solutions that ensure a hygienic, efficient environment for processing and preserving milk's goodness.

For instance, ABB provides automation for milk reception, pasteurization and for monitoring and control while transferring milk, cream and butter milk from reception tanks to packaging machines at Amul's Dairy III. Automation determines percentage of milk, cream fat, and non-fat solids, while queue-handling ensures prompt refilling of silos to maintain continuity without delays.

And as part of Amul's integrated plant systems, ABB developed a customized cleaning-in-place (CIP) solution to sanitize equipment such as the silos, milk and cream pasteurizers, cream tanks, dispatch lines and butter-making machines.

“We aspire to continue building on this trust”

Customized solutions keep milk flowing – and maintain strong trust

At 30,000 liters of milk per hour, a single drop of rancid milk or any other agent could curdle milk from several dozen herders. The CIP solution provides efficient filtration, automatic de-clogging, high and medium pressure cleaning with multiple repetitions, while reducing loss of milk and limiting need for cleaning agents.

Under demanding production schedules, ABB upgraded Amul's automation system to an 800xA solution to guide and monitor production - all in less than two hours. This was achieved only after months of on-ground testing, customization and adaptations from ABB, retaining familiar, trusted features while adding convenient new ones to a system that's now easier to maintain.

It's been a partnership in the best sense of the word: Amul's engineers' intimate knowledge of their operations, coupled with ABB's understanding of customers' needs.

“We aspire to continue building on this trust,” ABB's T R Ravishankar said.

The “White Revolution” was a World Bank-funded initiative for developing cooperatives modeled in line with Amul that increased milk production in the country five-fold over five decades. Amul often gets requests from other developing countries seeking to assist their rural farmers. It became the inspiration for 1977 National Film Award for Best Feature Film in Hindi winner, Manthan. The film was financed by over five lakh rural farmers in Gujarat who contributed Rs.1 each to its budget which has become an instant hit and depicts the Amul Story.

Watch the story unfold:

<http://www.amul.tv/amultv/viewfeaturedmovie.html>