

# System 800xA

## Argentine brewery upgrades active phase system



Arguably among the first biological engineering feats, the brewing of beer has been found to date back to the 6th millennium B.C. utilizing the biological process of fermentation, with barley mixed with yeast, hops and water.

The earlier forms of breweries used multi-storey structures, wherein the equipment for the early processes are located at the top level to let gravity naturally transfer the product from one stage to the next. The advent of the Industrial Revolution heralded the industrialization of beer production, with mechanical pumps, for instance, allowing more flexibility in designing the brewery.

Today, the diversity of size and design of breweries is matched by the diversity of processes and degrees of automation.

### Evolution takes a leap forward

One brewery that has set sights on continuous improvement of its operations and processes is Cervecería y Maltería Quilmes, one of the largest beverage companies in Argentina. A subsidiary of Belgium-based Anheuser-Busch – ranked among the Top 5 largest consumer companies in the world – the beverages conglomerate produces, processes, distributes and retails beer, soft drinks, mineral water, juice and isotonic drinks in partnership with other globally renowned consumer brands such as PepsiCo and Nestlé.

### Heritage and national pride

In brewing Quilmes, a premium 4.9% lager-style beer considered as the most popular beer in the country, Cervecería y Maltería uses hops from the Patagonia region and the purest water from the Andes mountain range. Founded in 1888, it accounts for 75% share of the Argentine

beer market, with an annual production of approximately 17 million hectoliters (hL) of beer and 8 million hL of soft drinks and other beverages. Quilmes is considered a national symbol of the Argentinean people, given its use of the colors of the Argentinean flag in its label.

In March 2010, Cervecería y Maltería completed upgrading the Mendoza City plant. The plant, one of Cervecería y Maltería's six plants, was powered by Symphony DCI (formerly System Six). It is the first among the plants to be upgraded to ABB's flagship automation solution, the System 800xA.

### Systems integrator steeped in vertical expertise

Latin Control S.A., a systems integrator based in Argentina, spearheaded the upgrading project. Leveraging its extensive experience across diverse industries – ranging from food and beverage, pulp and paper, power generation, cement, to technology – Latin Control also provides configuration and programming services for control equipment. As turn-key operator, its expertise includes instrumentation, process control equipment (PLC, SCADA, DCS) and engineering, mounting, process IT management and recording.

### The business case for the upgrade

Like in its other five plants, Symphony DCI was, for many reasons, the plant control system selected by Cervecería y Maltería Quilmes.

The size of the control system grew with the plants' revamps

and expansions. But as operations still continued to grow, the need arose to extend the system's life cycle. After evaluating the features of the new System 800xA, Cervecería y Maltería Quilmes decided to take on Evolution.

Evolving the system will allow the customer to preserve their most valuable asset: Expertise and knowledge contained in the control engineering and operation procedures.

Relevantly, the ABB Automation Sentinel Program made it easy to make the decision to evolve instead of simply migrating the system.

### Milestones and tangible results

Automated areas included grain reception, milling, brewhouse, fermentation, blending and filtration, service block (compressors, CO<sub>2</sub>, vapor, cooling), water plants and waste processing.

Complete plant automation was done alongside other different turnkey control projects involving the provision of system hardware (HW) and software (SW), cabinets, mounting, engineering, programming, Factory Acceptance Test (FAT), Site Acceptance Test (SAT) and commissioning services to control beer elaboration and auxiliary processes of the brewery.

The work for the control system migration had to be performed with least plant disruption or stoppage. The result





was better than expected. The start-up was accomplished by installing the old and new systems operating in parallel and keeping them working together for a few weeks until the operators were trained and familiarized with the new application. Only thereafter were the old conductor NT stations deactivated.

During commissioning and operators' training, the plant had to stop producing for only four hours. This was an important value-add as Cervecería y Maltería Quilmes had faced difficulties in one of its plants' migration to another automation solution provider.

According to the customer, there was a System Six already controlling the plant; thus the most convenient solution was to evolve from the heritage system to System 800xA. It had been installed in other plants of Quilmes Group before, with good results. Thus, they had no doubts over the decision to upgrade.



## ABB's supply:

ABB Symphony DCI Upgraded to System 800xA

- 5 servers, namely Connectivity Servers (CS) , Aspect Server, Domain Server (DS), Information Server (IM) and Batch Server, 800xA for DCI Connectivity Server
- Application servers: Batch Manager, Information Manager
- 4 controllers - Distributed Control Units (DCU). Redundant Control and redundant Ethernet network. 3 AC800M, 32 MB Redundant Processors and Redundant Ethernet Network
- 7 operator workstations - Single Monitor Workplaces and 4 Dual Monitor Workplaces
- 1 engineering station
- Direct I/O: 3.500
- Remote I/O: 1000 via Profibus
- Redundant Control network: Ethernet TCP/IP 10BaseT
- Visualization network: Ethernet TCP/IP 100BaseT

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