Double Capacity and Half the Cavities with Simatic PCS 7

Recaldent™ is a revolutionary dental care product that prevents cavities and can reverse decay. Developed at the University of Melbourne's School of Dental Science, Recaldent is derived from casein, a milk protein, and is used in chewing gums, toothpastes and other products.

Recognising Recaldent's market potential, Cadbury-Schweppes purchased the product from its original manufacturer in Gippsland, east of Melbourne. As the sole supplier of Recaldent, increasing worldwide demand meant Cadbury-Schweppes needed to build a new plant to expand their production capacity. The new plant was opened in Scoresby, Victoria with full production starting in March 2006.

The new facility gave Cadbury-Schweppes the opportunity to improve on the original production process which lacked integration and flexibility. By upgrading to Simatic PCS 7 Cadbury-Schweppes gained an integrated, flexible process control system. The PCS 7 process control system has also provided improved data availability and made it possible for Cadbury-Schweppes to significantly upgrade their production capacity to meet burgeoning consumer demand.

A Need for Integration and Flexibility

As a relatively new product, the production process for Recaldent was still being refined when the new plant was being built. The original manufacturer had used a manual production process and subsequently added various pieces of process equipment each with its own control system. This created a lack of integration and flexibility.

Anthony Kelly, Recaldent Area Manager, explains:

"The old system had quite a few patches and upgrades. There were several sections to the plant that were introduced at different times, so they were stand-alone and not integrated with the rest. There were also several software changes over the years and there wasn't a great understanding of how it was all connected."

Adrian Beatty, Director of Techeng, a Siemens Solution Partner, engineered and installed the PCS 7 control system. Adrian says that the original stand-alone systems had major shortcomings.

"Personnel had to operate one plant from inside the control room then run upstairs to the platform to make sure the other plant was doing what it should be doing. There was no integration at all, there was just small discrete plants within one overall plant."

The Solution

Cadbury-Schweppes needed a process control system that met several criteria. They:

- needed to integrate the entire system in the new plant using existing equipment
- wanted to improve the production process
- required flexibility that would enable them to alter the production process and upgrade capacity
- needed a high availability process control system with extensive diagnostics and the capacity to handle extensive validation requirements should they be needed in the future.

After thoroughly evaluating several systems against the criteria, Simatic PCS 7 was selected.

“Being a process plant, PCS 7 matched very well with what we were aiming to achieve,” Anthony Kelly says.

“We didn’t have to change the software to make it suit our needs. It’s based on the process setup, so the framework matched what we wanted to do without having to create code and software to represent the process.”

“PCS 7 also gives us the flexibility for future expansion for functions and sections of the plant,” he says. “If we need another pump, we just copy and paste it. We don’t have to re-engineer all the sequences.”

Adrian Beatty agrees that the PCS 7 system delivers important benefits including the ease of designing the control system, adding valves and pumps, and changing sequences.

“Once the system is designed it’s very easy to put together. The Recaldent plant was perfectly suited to the PCS 7 and the Totally Integrated Automation (TIA) concept from Siemens because there were several discrete plants which could be implemented as one,” he says.

TIA provides customers with a comprehensive range of products and systems for automation solutions which are designed for the entire production chain. The technology is based on standard interfaces which are designed for long-term stability, thus guaranteeing maximum safeguarding of investment. It also eases the process of integrating devices and ensures a common operator environment.

For Anthony Kelly, the ease of implementation and use is a major advantage of the PCS 7 system.

“The transparency of the software enables operators to be guided through the sequences. The software is there in plain English, so it can be used by all levels including operators, maintenance crews, and management. Quite often you wouldn’t be able to provide that level of detail to all those levels without writing very

comprehensive software. Having it there as a built-in feature was a huge benefit for us," he says.

Reporting has also been simplified on the Recaldent plant since PCS 7 was installed. With an intuitive design and easy to implement reporting structure, information can be related quickly and efficiently for analysis. For instance, the plant produces trends from a CRP report. This helps operations personnel from a compliance point of view by providing documentation of pasteurisation and other processes.

Simatic PCS 7 also provides the option to add validation tools if required.

"If we would ever need to have an extensive validation environment, we could easily add it on without a lot of time and effort," he says.

Growing Without the Pains

For Anthony Kelly, the major benefit of Simatic PCS 7 is the ability to upgrade and alter production with much less engineering and commissioning time. Recent upgrades have enabled Cadbury-Schweppes to more than double their production of Recaldent.

Kelly looks forward to continued improvements and upgrades to meet the growing demand for Recaldent around the world.

"This is our third capacity upgrade in two years," he says. "Now we're analysing the system to get more benefits from it and also looking at where we need to invest for our next upgrade."

With Simatic PCS 7 such expansions and productivity increases can be easily and effectively handled. Demonstrating once again, that Simatic PCS 7 really does "take you beyond the limits".