Maren Becker, center, sat down with Kay Koch, left, and Thomas Feldmeier to discuss the rising demand for mineral water.

Water

Thomas Feldmeier and Kay Koch discuss the increasing demand for processing plants producing mineral water and soft drinks

Preparing for a healthy future with mineral water

People are thirsty and more and more often, they are reaching for mineral water to quench their thirst. While every German citizen drank an average of 83 litres of mineral and spa water in 1990, by 2005 this rose to 127.8 litres. Expectations are that consumption will continue to rise, given the increasingly health-conscious atmosphere and higher temperatures during the summer months. Mineral water is, quite simply, in fashion. Thomas Feldmeier of Südmo Components GmbH and Kay Koch of Südmo Projects GmbH are certain that the crystal clear elixir is set to experience a boom. This KnowHow article looks at the prospects and challenges for process engineering in the field of mineral water and soft drinks.

KnowHow: Mr Koch, do you prefer to drink mineral water or tap water?
Kay Koch (KK): That's difficult to say – sometimes one, sometimes the other.

At the 2005 Hannover Trade Fair, Norit Südmo constructed a "Life Factory" for mineral water. The customer was the electronics company Siemens. How does a mineral water system fit into their portfolio?
Thomas Feldmeier (TF): That was rather unusual. Siemens had made enquiries on the market and approached us. The topics were process software and measuring technology in the food sector. For this reason, the project suited us very well. The display in Hannover put our collaboration on a more solid footing.

What characterizes Norit Südmo systems?
KK: With our philosophy of modular construction. We cover all areas of a plant - from the design of the plant, measuring technology at the wellhead, validation, and the process software through to the point of transfer for the bottling system - we deliver all modules inclusive of automation and purification concepts. You can always pick out a Norit Südmo plant.
TF: Thanks to the system modules, we can also apply our technology and expertise in sections.

You are currently trying to win one of the largest mineral water projects in Europe. What do you think justifies this faith in Norit Südmo?
KK: The customer had a problem and we resolved it. That is convincing.
TF: We are not too small, and yet not so big that we cannot provide a flexible response. We started out in the German market, and German companies took us out into the world and recommended us to others. Today we are the "Preferred Supplier" of Nestlé international.

In plant construction at the end of the 1970s, work was still being carried out on large control panels as a kind of remote control. What has changed in process engineering since then?
KK: Previously, it was possible to tap into the spring and operate by hand. The end of the 1980s saw the arrival of automation as we know it today and this went hand-in-hand with a technological upheaval. Today, plants must comply with the standards set by the food and drink industry and with legislation. Process engineering in the mineral water sector therefore requires sound knowledge and expertise.
TF: We can control the processes and visualize these via the user interface.

Where do you think the challenges lie with regard to the automation of mineral water plants?
KK: They lie in the customer's individuality – no two customers are the same. The personalized process begins with the well loop, where the quality of the untreated water is measured before, say, a 14 kilometer long pipeline conveys it to the treatment plant, the hydraulic separator and the filter system – all traces of iron and manganese have to be removed from the water – and it is then stored in sealed tanks and bottled. Everything has to be of a consistently high quality. We devote a great deal of time to many projects and work proceeds one step at a time. Sometimes it's like open heart surgery – the system as a whole remains ready for operation while one component is renewed.

Norit Südmo is already carrying out work in Argentina, Brazil, the U.S., Slovenia, The Netherlands, Switzerland, Spain and the United Kingdom. Does this type of work differ from German projects?
KK: It doesn't make a huge difference whether a plant is constructed in Germany or in another country. The requirements are specific to the country, as they must comply with the provisions of the relevant legislation. In this regard, the Norit Group's Sales Offices play an important role, as they know their local customers very well and can procure sales by working as an extended arm of the German headquarters.
TF: And there are always our own standards to live up to – not to mention those of the customer.

What are the prospects for the business sector?
KK: The future lies in the area of non-alcoholic drinks. The mineral water market has not yet become saturated here and customers are continually bringing new products onto the market. They know that we will handle this challenge. We will respond to new demands with new plant technology, combined with individual solutions.
TF: With regard to components, the demands placed on vital parts are increasing: the pressure, flow rate and sterilization temperature are rising while cleaning agents are becoming more aggressive. We must find sensible solutions using materials that are easily available, thereby keeping our suppliers on board.

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For these types of projects in the area of mineral water and soft drinks, the scope of delivery may consist of the following components: wellhead, water treatment, storage tank with valve manifolds, syrup room or CIP system. Depending on requirements, these may be implemented as an individual module or integrated into a complete solution.

References:

- Buxton Mineral Water Company - England
- Le Natures - US
- CERPA-Cervejaria Paranese S/A - Brazil
- Hassia Mineralquellen - Germany
- Radenska - Slovenia
- Nestlé Waters in multiple locations

Beverage

Measuring CO_2 in the field of mineral water and soft drinks

As a result of the constant increase in sweetened soft drinks and mineral waters in a wide range of flavors and the new forms of packaging that are constantly being developed by marketing staff, this market is experiencing a continual expansion of choices.
However, product quality remains a factor that is closely monitored and that keeps presenting some soft drink bottlers with very great challenges. These developments and the increasingly strict quality requirements concerning CO_2 content in bottled drinks, among other aspects, call for highly reliable measurement outcomes and make it vital that these can be reproduced.
With the launch of Norit Haffmans' Automatic CO_2 Tester type CBL, a device is now on the market that is flexible enough to measure CO_2 content in almost all types of packaging and dimensions, whether PET bottles, glass bottles or cans. Originally brought onto the market for use in breweries, Norit Haffmans has further developed the CBL so that it can also be used with non-alcoholic drinks that foam strongly, such as mineral water. One of the changes made to achieve this was the development of a special tapping apparatus.

By selecting and programming up to 100 different products, precise attention can be paid to the various product types and the corresponding forms of packaging. Moreover, for each product, a separate formula for calculating CO_2 can be saved in the device, as can the procedure for the CO_2 measurement itself. This function enables the user to carry out independent measurements when dealing with the same product in different forms of packaging and also when determining the composition of an individual product. The binding of CO_2 can be considered in line with the sweeteners used in the drink, thereby permitting the user to precisely determine the amount of bound CO_2 in the water or soft drink.

With this new CO_2 tester for carbonated, non-alcoholic drinks, Norit Haffmans is responding to the continually increasing demands and wishes of the bottling market, and providing another flexible and reliable device to complement the extensive range of products available in the field of CO_2 measurement.

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