🧱 BUILDING THE WELLNOX RÅVOLUTION PLANT

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The SBR is a magazine that covers both the brewing industry and the soft drinks and related industries. But we must admit that we for very long time – probably always – had an overwhelming bias to the brewing side. It is outside of the scope of this short lead to Uwe's article to discuss why, so let me just express my great joy with the fact that this article describes a project in the soft drinks industry, albeit in a niche of this, namely the 'health drink' segment. But this is, for reasons Uwe explains, a growing segment of the drinks market.



THE COMPANY BEHIND THE RÅ BRAND

Wellnox is an initiative to give more people access to natural products directly from nature's own pantry. Today, there is a lot of intensive research going on in a number of areas related to how what we eat and drink affects our health. And, as well, there are a lot of discussions in the media and the public domain about these topics.

The people who run the Wellnox initiative are Mats Tärning and Thomas Sjölander, both with backgrounds as company owners and entrepreneurs. Their interest was born in connection with Thomas having a heart attack in the summer of 2013. Thomas has a genetic disposition for heart disease, and

Outside view of the Wellnox plant, effectively used for marketing

he began to carefully study what factors can actually affect the risk of becoming a victim of the same thing again. He also felt bad about the medication he was prescribed. That was when Thomas came in contact with the medical doctor Olle Haglund and professor Karl E. Arfors, as well as Mats Tärning, who today is behind the Wellnox initiative.

They got the idea to share it with other people. After many and long meetings with MD Olle Haglund and Professor Karl Arfors, they decided to start their own production of, initially, beetroot and lingonberry juice in a few different combinations, including pomegranate. As a result, their product range RÅ



was born. Today, the product range also includes juices of blueberries, aronia and cranberries as well as products with lemon, ginger, turmeric, carrot and sea buckthorn juice. Wellnox truly believe in their idea and want to spread the knowledge and access to natural dietary supplements to as many people as possible. They guarantee simplicity and authenticity, and only the best ingredients are good enough. Wellnox strive to have no additives in their products as far as possible, but pasteurize them.

The ambition is to grow the product range in the future with additional natural products that Wellnox know are in demand.

THE HISTORY OF THE PLANT

The company Wellnox Health AB was founded in 2014 and started to distribute their products in 2015. A sales office and storage facilities were established in Norrköping in Sweden. Lacking its own facilities for production, Wellnox engaged with three other beverage companies to externally produce the RÅ product range in 50 cl glass bottles, small 7 cl bottles and 3000 cl bag in box. The line for 7 cl bottles was bought by Wellnox but installed at one of the production companies. At their plant, this line was operated by Wellnox, which regularly went there for bottling.

The product sales developed well and, in 2017, discussions about the investment in their own production plant started. Wellnox looked for suitable buildings in Norrköping and a contact with AB Maseco as a possible general contractor for the equipment was established. In 2018, Wellnox found a suitable building at Hagagatan owned by the company Klövern, and finally a rental agreement was signed in October. As the building had only been used for storage before, it had to be modified for beverage production. This was done by Klövern, Bag in box filler from Alfa Laval

which engaged several entrepreneurs. In addition to the agreement with Klövern, an agreement with Maseco was also made covering the projecting, the delivery, the installation and the start-up of the production equipment. Maseco has had close cooperation with the undersigned and Leibfacher CBB Consulting AB since 2003, with a long history of projects completed in cooperation. Maseco's project leader Mikael Nilsson engaged Leibfacher CBB Consulting AB (which had joined in already from the initial meetings in 2017) as a manager/coordinator of the installation and the start-up of the production equipment. At Klövern, Stefan Jönsson worked as their project leader who called all the entrepreneurs, Mikael Nilsson, Uwe Leibfacher and Wellnox, to eight regular building meetings that were held from November 2018 until May 2019. Before that, both projects, building and equipment, got started with a coordination meeting on October 5th, 2018, and there was agreement on a preliminary schedule aimed at a start-up of the factory in May 2019. The building activities covering the production area should be finished in March 2019 in order to be able to start with the installation from that time. The office and storage areas building activities should be finished in January 2019, in order to make it possible to move there from the existing sales office.

THE SETUP OF THE PLANT

Wellnox decided not to install all equipment in one step, but to initially go for two of their three types of packaging. A line for 50 cl glass bottles should be installed in a second investment step as well as further tank capacity. As a result, a layout for the complete factory was made with the possibility to add further equipment. This layout was adapted as the base for the building project. The initial setup was defined as follows:

- Steam vessel (two electrical steam generators) 300 kg steam 6 bar per hour
- Air compressor
- Cooling plant 100 KW for tanks and pasteurizers
- 3 cooled blending tanks, 2 x 5000 litres and 1 x 7500 litres with temperature control, weighing cells and stirrers (frequency controlled)
- Pallet scale with weight control
- 2 smaller mobile blending tanks 300 litres and 800 litres
- 1 waste water tank 12500 litres
- Product pumps and piping systems with panel
- Fully automated CIP plant with three vessels water, hot caustic and acid/disinfection



- Fully automated flash pasteurizer for the BIB line
- BIB line 300 BIB 3 l/hour consisting of carton erector, BIB filler, carton sealer, best before marker and conveyors
- 'Shot line' for 7 cl bottles (moved from the other company and equipped with additional equipment)
- Basic laboratory equipment

The equipment budget was defined with nine million SEK (Swedish crowns) for purchase, to installation and starting up the equipment. Because of this relatively low budget, it was necessary to integrate several pieces of used equipment. Mikael Nilsson and Uwe Leibfacher were responsible for buying the equipment, which was done during an intense period in autumn 2018.

ABOUT THE CHOICE OF EQUIPMENT

We were lucky to find suitable second-hand alternatives for all the tanks and also for the CIP plant. Apart from that, we also found two used Certuss E 100 steam generators, 160 kg steam per hour, from 2013. The specialists from Steam Team helped us with the design of the steam piping and the right dimensions for all steam fittings for the plate heat exchangers. The flash pasteurizer was constructed by Maseco and the CIP plant by the German company Hormes. Also, Maseco and Hormes have a long history of cooperation, generating an effective work flow and low costs under installation. Maseco installed the CIP unit from Hormes, and only the programmer from Hormes needed to come to Norrköping for the start-up.

CIP cleaning of a mobile blending vessel in front of the blending tanks

Backside of the Hormes CIP unit with return pipes

He integrated the waste water tank in the control of the CIP unit as another benefit.

The waste water tank is a necessity because of local waste water restrictions. Wellnox is not allowed to send waste water with a pH lower than 6.5 or higher than 11 to the local treatment plant. Therefore, the waste water from the CIP unit with a pH outside of the legal limits goes to the waste water tank where it can be neutralized via the dosing pumps of the CIP unit. With regard to the BIB line, Maseco bought a used one, that was completed with a new aseptic Alfa Laval CAF filler. Maseco constructed a new bottle feeder for the shot line. Before, it was necessary to put the bottles on the conveyor to the filler manually. The bottle feeder replaced one operator, which made the decision for this investment easy. The piping layout and the layout of panels and the dimensioning of pumps were done by Uwe Leibfacher. We even integrated some used and reconditioned pumps.

KEEPING THE TIME SCHEDULE AND THE BUDGET

The communication and cooperation between the two projects, building and equipment, was really good. One reason was a clear structure supervised by the building meetings and effective and close communication between the project leaders and Wellnox. We had a little delay in the building project that caused a later start of installation, in April instead of March. Nevertheless, all equipment was up and running by the end of May 2019. The official opening of the RÅvolution plant was held on June 14th.

We put great efforts into projecting and planning from the beginning and defined the production processes with an objective that only one operator should be able to run the plant except for filling/bottling. Wellnox recruited their production manager Marcus Johansson at an early stage of the project,



New-constructed shotline bottlefeeder from Maseco



making it possible for him to join the plant design work and to observe the installation. As a consequence, we could adapt several details according to his wishes. This generated both a good operator understanding and effective process functions. Most of the equipment worked very well directly from the start-up.

Both the time schedule and the budget got continuously updated. We had a detailed schedule for the installation that was followed up day by day. We were able to react directly and put extra efforts on things that might cause delays. Wellnox showed great commitment under installation and start-up, which contributed to a good spirit among the entrepreneurs. In April, we had parallel activities both from the building and the equipment projects with about ten entrepreneurs working at the same time, but the coordination between all these worked well. For instance, everyone who needed a sky lift got one!

DETAILS TO REFLECT UPON

Even in well-working projects, there are some details that could have been done better. We had a minor overrun of the equipment budget for different reasons. One reason was the integration of used equipment. The costs for that were higher than expected, mainly due to expensive spare parts for the steam generators.

Another reason was the piping system for compressed air that was included in the building project instead of the equipment budget, thus the piping system was built before the installation of the equipment. In spite of the fact that we had supplied detailed drawings for that, some things had to be changed when all the equipment had been placed. It would have been cheaper to include the pipes for compressed air in the equipment project.

The third reason for the budget overrun was the start-up of the BIB filler, which took longer than expected due to several unforeseen problems. A reason belonging to the "bad luck category", which has to be included in the contingency part of every budget. Unfortunately, we had more bad luck in this case than expected.

ABOUT THE AUTHOR

Uwe Leibfacher is an experienced brewmaster (graduated Diplom-Braumeister at TU München-Weihenstephan in 1988) who worked in leading positions in several breweries in Germany and Sweden until 2002. Since 2003 he has been running his own company, Leibfacher CBB Consulting AB who is based in Halmstad/Sweden. Uwe Leibfacher has been involved in many smaller and bigger beverage projects in Scandinavia just as the delivery and start-up of the Nørrebro bottling-line at Baldersbrønde in 2005, relocating and enlarging the craft brewery Nils Oscar in 2006 and 2013/2014, preparation of Herrljunga Cider for BRC certification 2010 and several piping layouts for process equipment in breweries and soft drink plants.