

Strength through unity

Ukraine's Obolon brewery and KHS continue successful cooperation

Breakneck growth and one success after another – Ukraine's Obolon brewery shows how it is done. In 1992, Obolon was the first operation to be privatized in Ukraine. The brewery has been operating as an independent corporation since 1993. At that time, Obolon's beer output was a mere 0.63 million hectolitres. However, the brewery capacity was designed for one million hectolitres which in itself was intended to cope with long-term targets and objectives.

In fact, the long-term targets and objectives were achieved in no time. Obolon achieved sales of one million hectolitres by 1996, which no one would have thought possible originally. Even less foreseeable were the success stories that followed. Obolon's beer sales totalled 2.8 million hectolitres in 2000, then climbed to 7.7 million hectolitres in 2005, and with 10.9 million hectolitres, exceeded the 10-million hectolitre mark in 2007.

A 20% growth in beer sales is predicted for 2008 as well as for the next few years. Mr Alexander Puchok, Obolon's general director, says, "We also plan to continue to expand even more

vigorously than the beer market in Ukraine."

Since 1995, KHS has been Obolon's loyal companion in this success story. Their paths converged with the delivery of a glass bottle line capable of processing 30,000 0.5-litre bottles per hour. Today, the Obolon brewery has a total of four glass lines, four PET lines, two keg lines and two canning lines from KHS. The most recent projects include a new glass line with an output of 50,000 0.5-litre bottles per hour, a new 60,000 can-per-hour canning line, the expansion of a keg system, and the associated increase in total output to 1,000 kegs per hour.

Mr Puchok says, "We depend exclusively on KHS equipment in our brewery. For us, KHS is very clearly a trusted partner."

Comprehensive consulting service

KHS has played an active part in the Obolon success story not only in the filling and packaging equipment area but also when it came to providing turnkey line technology. From the start of the cooperation to the present day, KHS has provided the Obolon brewery at its request with consulting services. Whether questions about the selection of raw materials or recipes for new specialty beers – KHS is always ready with advice and answers.

For example, KHS technology was involved in the initial production of Pilsner in the Obolon brewery. When mixed beer beverages started to become popular worldwide, KHS recommended that the Obolon brewery also produce such beverages. Today, Obolon's mixed beer beverages are available in lemon, orange, cherry, raspberry and cola flavours. They are hugely successful and enjoy an ever-increasing crowd of fans. In 2007 alone, Obolon's sales in this segment increased a full 50%.

Another KHS role is to provide comprehensive logistics consulting. From the placement of the line and optimised supply and discharge to and from the lines to the control of transport routes on the company site, all these logistical processes were defined in cooperation with KHS. The KHS consulting service is also essential for new construction projects. The high significance of the optimisation of logistical processes is easily explained by the fact that the original site was designed to produce one million hectolitre of beer while the Obolon brewery now produces 11 times that quantity.



Mr Alexander Puchok, Obolon's general director, says, "We will maintain our reputation as an innovator of beer, non-alcoholic beverages, and alcopops and in the field of technical innovations. In this context we shall continue to see KHS as a trusted partner at our side on our path to success."



When new plans are in the pipeline, as with so many other things, the first step is to pick up the phone and call KHS.

Fully automated process monitoring

Comprehensive KHS consulting service for the Obolon brewery is one side of the coin. The other side of course is the great responsibility entailed for KHS. KHS is actually involved in every step within the brewery from the production of the beer to its delivery. The entire process is fully automated, from fermentation to bottling and packaging. The beer is assigned to individual tanks at the filtration stage. The filling lines are supplied automatically from the pressure tank. The tank CIP process is also automated.

For a view of the process within the brewery and the quality of the products, all of Obolon's systems are equipped with multi-phase automatic control units. Information is stored in a central database from where it is forwarded to the individual control entities via Ethernet. The product data is additionally logged and processed automatically. Thanks to this integrated customised KHS solution within the Obolon brewery, a precise overview of all products that leave the brewery is guaranteed at all times.

The right beer for all target groups

Today, the Obolon brewery offers an extremely wide variety of products. The range of different brands of beer alone is huge. This is because the brewery actually offers beers for all target groups.

Mr Puchok says, "The Obolon brewery is a 100% Ukrainian brewery that produces beers according to typical Ukrainian tastes. Our aim to reach the whole of the Ukrainian market with our beers is therefore consistent."

Obolon thus serves the super-premium beer market with its brand Magnat. It supplies the premium segment with its Hike Premium, Hike Premium Light, Obolon Biermix, and Obolon Pils brands. The upper mainstream is targeted with Obolon Premium, Obolon Soborne, Obolon Mitzne, Obolon Barchatne and Obolon alcohol-free brands and its Obolon Switle lager is aimed at the mainstream market. The Obolon brewery also supplies Okhtyrskye and Dessant for the discount segment.

Second place in Ukraine, first place for exports

The Obolon brewery currently holds a 30.4% market share of the Ukrainian market, which puts it in second place within Ukraine behind Sun InBev. In terms of combined Ukraine brewery sales and export profits, however, the two brewery groups are neck and neck. Obolon currently enjoys a 75% share of all Ukrainian beer exports. In 2007 alone, the brewery exported 2.37 million hectolitres of beer to a total of 33 countries. Russia and Belarus are the key export markets. In Belarus, Obolon quality beer has a 5% share of total beer sales and 2% in Russia. Other significant export countries for the Obolon brewery include Estonia, Latvia, Lithuania, Armenia, Georgia, Azerbaijan, Poland, Germany, France, Spain, Portugal, Italy, UK, USA, Canada, Australia, Greece, Cyprus, Israel and Vietnam.



Through the can rinser ...

Mr Puchok adds, "The list of countries that appreciate Obolon quality beer is getting longer all the time." He sums it up as follows. "Beer brewed to traditional Ukrainian tastes seems also to appeal to international tastes."

Ukrainian beer market offers great potential

Despite its worldwide success and planned expansion of export activities, the Obolon brewery is focusing clearly on the Ukrainian market also in the future.

Mr Puchok says, "There is still a lot of potential here."

Indeed, the per capita consumption of beer in Ukraine has risen steadily over the last few years. In 2001 for example, it was 26 litres, in 2003 it was 35 litres and by 2007 it had reached the 61-litre mark. Experts forecast that per capita beer consumption will increase to 85 litres in the medium term. This gives reason for hope of further sales increases in Obolon's home market.



In addition to beer, the KHS canning line handles mixed beer beverages, non-alcoholic beer, and soft drinks. In this picture is the Innopal ASH depalletizer.



Non-alcoholic beverages and alcopops in addition to beer

Although Obolon's focus is clearly on its brewing activities, beer has long since ceased to be the only thing the brewery has to offer. The company also offers an extremely successful range of non-alcoholic beverages. Obolon sold a total of 2.07 million hectolitres of soft drinks and fruit beverages in Ukraine in 2007. Added to this is almost one million hectolitres of bottled water. A figure that clearly puts Obolon in second place among manufacturers of alcohol-free beverages in Ukraine. The Obolon portfolio also includes alcopops, 418,000 hectolitres of which were sold in 2007.

Similar to beer, Obolon is highly innovative when it comes to non-alcoholic beverages and alcopops. New consumer requirements are quickly recognised, analysed and transformed into innovative beverages based on market studies. The most recent development in 2008 is the *Frest* energy drink.

Setting record after record – also in the area of plant technology

Obolon occupies an excellent position within Ukraine also with regard to plant technology. Obolon has broken numerous records in this area. In 1996, Obolon invested in the first keg filling system and in the highest capacity canning system in Ukraine at that time (30,000 cans/h). In 1999, Obolon received the then largest PET line in Ukraine (24,000 PET bottles/h).

It was in 2002 that Obolon commissioned an *Innopro GETRA ECO* candle filter with a filtration capacity of 800 hL/h – the world's largest at that point in time. The year 2003 saw investment in a glass-filling line which still has the highest capacity in Ukraine today and at the same time is one of the highest capacity glass bottling lines worldwide (110,000 glass bottles per hour). In 2007, Obolon even broke its own record by investing in the currently

biggest *Innopro GETRA ECO* in the world, designed for a filtration capacity of 950 hL/h.

In comparison, the most recent investment in the KHS glass and canning line and in the extension of existing keg

...straight to the heart of the line, the *Innofill DMD* can filler – a robust filler designed for a long service life coupled with a high capacity and optimum filling quality.



KHS integrated buffer segments into the canning line to maintain the line flow.

equipment might appear less spectacular. On closer inspection however, it is clear that this plant technology also incorporates numerous special features, confirming yet again KHS' good system competence.

New KHS canning line responds to increasing popularity of cans

Since the advent of the can production in Ukraine, the popularity of this type of container has increased with breweries and non-alcoholic beverage manufacturers. The main reason is of course that beer and non-alcoholic beverages packaged in cans have become very popular with consumers in Ukraine. Obolon has responded to the increasing popularity of cans by investing in a new KHS canning line designed to fill 60,000 cans per hour. The capacity of the existing KHS canning line is up to 30,000 cans/h.

Obolon erected a new building on its site especially for the new canning line. As usual, KHS provided a helping hand at the building planning stage as it did with the integration of the new canning line to the overall logistics concept.

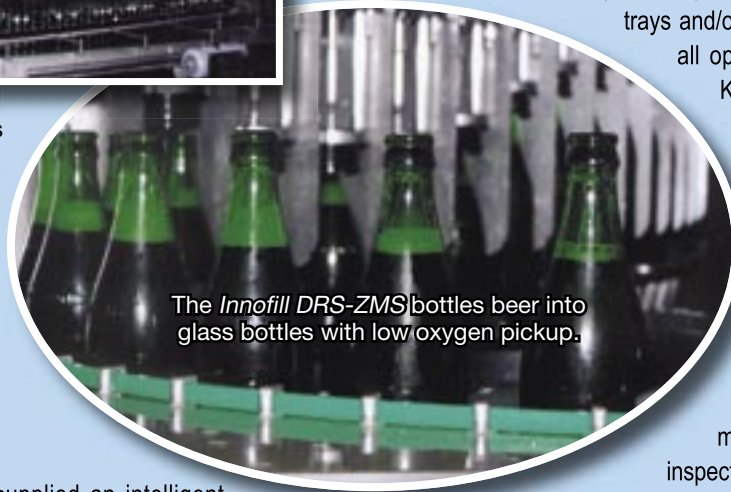
Well-planned overall concept

In order to make optimum use of the remaining space on the site, the building erected for the new KHS canning line is a three-storey structure. The filling line is situated on the third floor. The first and second floors are intended for palletizing and depalletizing and for storing full and empty containers. KHS developed an intelligent concept together with Obolon which automatically supplies and discharges full and empty containers plus additional consumables such as liners, caps, empty pallets, etc. to and from the line.

The process is based on pre-specified priorities and is orientated wholly towards the prevailing requirements within the line. If priorities change, the program parameters can be changed immediately.



Every centimetre of space was optimally utilised in the new KHS glass line. For example, the single-end bottle washer was fitted neatly between two existing columns. Label and broken glass discharge, pump stations and many more features all had to be fitted into this confined space.



The *Innofill DRS-ZMS* bottles beer into glass bottles with low oxygen pickup.

“As usual, also here KHS supplied an intelligent logistics system well thought-out down to the last detail,” Mr Puchok says.

Mr Puchok describes the placement of the new KHS canning line as a superb feat. KHS supplied all line components and installed them just in time to save them from exposure to wintry outdoor conditions with temperatures of up to minus 30°C.

“A perfectly harmonised scenario,” says Mr Puchok.

In addition to beer, the KHS canning line also processes mixed beer drinks, non-alcoholic beer and soft drinks. The cans leave the *Innopal ASH* depalletizer and an air conveyor feeds them over a vacuum bridge that checks and channels out any damaged cans. They then pass through the can rinser straight to the heart of the line, an *Innofill DMD* filler – a robust filler designed for an extremely long service life coupled with a high capacity and optimum filling quality.

The design of the *Innofill DMD* filling valve is extremely advantageous compared with the counter-pressure valve. The filling valve is not opened until the pressures between the can and the ring bowl are equal. This results in calm filling with low CO₂ loss and minimum oxygen pickup. Prior to snifting, the return gas tube is retracted from the can into the filling valve for fast, dry, and foamless pressure relief. Obolon invested in the *Innopro PARAMIX CMX* blending system installed upstream of the filling process particularly for non-alcoholic beverages.

A modular double-deck *Innopas PII SC* pasteurizer handles the task of product pasteurization. It is equipped with an

integrated *PU* control system and is designed particularly for gentle product handling. The system stores the appropriate pasteurization program for each type of product to be filled.

The *Innopack Kisters SP 100 V* shrink packer and *Innopack Kisters TSP 050 V* tray shrink packer provide flexible can packing options. Whether packing cans in shrink packs or on tray shrink packs or placing shrink packs on trays and/or pad shrink packs, all options are possible.

KHS provided comprehensive advice on packaging materials in addition to supplying packaging equipment. All cardboard and film materials are closely inspected by KHS for every packaging application before they are approved for use in the system. An *Innopal PBN* automatically sets up the layer formations and palletizes the readied packs.

Continued popularity of glass bottles

At the present time, canned beer represents only 7% of Obolon's beer sales. Another 35% is sold to the consumer in PET bottles and 12% is delivered in kegs to the food and beverage trade. Because the lion's share, 46% of all beer sales, is still sold in glass bottles, Obolon's investment in a new KHS glass line comes as no surprise.

A 50,000-bottle/h glass line in place of a 6,000-bottle/h PET line

The challenge here was that the only available space for the



An *Innopack PPZ* packs the readied crates perfectly.



new KHS glass line able to handle 50,000 0.5-litre bottles/h was a space used until now for a PET line with a capacity of 6,000 PET bottles per hour.

“As expected, KHS once more managed to achieve the almost impossible. We never cease to be amazed by the high degree of flexibility and system competence repeatedly demonstrated by our trusted supplier,” Mr Puchok says.

The new KHS glass line works very well according to KHS’ sophisticated line supply and discharge plans. Waiting empty bottle pallets are depalletized by an *Innopal RS3 1EKN* depalletizer. The decrater is an *Innopack PPZ*. The *Innopack PPZ* crating equipment is characterised by a highly flexible gantry system. The gantry-type crater is supported by four columns and can be used equally well as a sorting crater and decrater, order-picking crater, or multi-function machine. The *Innopack PPZ* therefore acts as the crater and decrater in the new glass line.

The bottles are washed by an *Innoclean EM* single-end bottle washer that illustrates the way the line utilises every centimetre fully, fitting neatly between two columns. Label and broken glass discharge, pump stations, and many more features all had to be fitted into this confined space. The Obolon brewery chose the computer-controlled *Innofill DRS-ZMS* pneumatic pressure filling system as the heart of the line.

The *Innofill DRS-ZMS* is designed to bottle beer in glass bottles with low oxygen pickup. Other advantages of the filling system lie in its great flexibility with regard to both the product and the bottle. An *Innokit KL 2080* labelling machine applies the labels accurately to the bottles. Equipped with two labelling stations, it applies front, back, and neck ring labels to refillable and non-refillable bottles. Once labelled, the bottles are packed by the *Innopack PPZ* into prepared crates which are then conveyed directly to an *Innopal RS3 1BKN* palletizer.

Upgrading to a capacity of 1,000 kegs/h

Foresighted planning is yet another decisive factor in the cooperation between Obolon and KHS. This forward planning is evident among other things in the recent upgrade of an existing KHS keg line from 400 kegs/h to 1,000 kegs/h. When the Obolon brewery invested in a KHS keg line in 2004, it anticipated a rise in the

demand for beer in kegs over the coming years. KHS presented the *Innokeg Contikey* rotary machine concept that combines pre-washing and main washing processes in one carousel and

the filling process in another.

When the keg line was upgraded, the pre-washing and main washing processes were separated. A further washing carousel was installed in the space already provided for this purpose in 2004. The performance enhancement also included installation of a second flash pasteurizer that directly communicates with the existing flash pasteurizer. Both flash pasteurizers were connected to an amply sized buffer tank right from the start to allow for future expansion. Space has also been allowed in the filler carousel for a possible future capacity upgrade. The upgrade in this case involved integration of additional filling stations. Further components recently integrated into the line to meet the requirement for increased performance include a keg exterior washer, two keg turners, a keg decapper and a keg capper.

Modifying the piping, media supplies and keg conveyors is an equally important part of the conversion activities. New palletizing technology was also required to manage well the more than doubled performance of the keg line before and after keg processing. The previous palletizer, which served as palletizer/depalletizer, now only depalletizes the kegs, while the newly integrated *Innopal PK1 BKN1* is responsible for palletizing.

“Here again, things went like clockwork. KHS completed the conversion within a minimum amount of time. It was the only way we could remain in a position to meet the existing high demand for keged beer by the food and beverage trade,” Mr Puchok says.

The only Ukrainian large brewery in 100% Ukrainian ownership and one of the “Top 100 companies in Ukraine”

Obolon currently has about 15 sales locations in Ukraine. Therefore, the only 100% Ukrainian-owned large brewery in Ukraine is equally well represented throughout in its homeland. At the same time, beer drinkers on all continents see Obolon as the number one Ukrainian beer.

Mr Puchok says: “Obolon is one of the country’s best calling cards both inside and outside Ukraine.”

The Ukrainian population agrees, a fact that is shown by a very special award. The brewery has been named as one of the “top 100 companies in Ukraine”.

Mr Puchok says “We shall not rest on our laurels now nor in the future. We will maintain our reputation as an innovator of beer, non-alcoholic beverages and alcopops and in the field of technical innovations. In this context we shall continue to see KHS as a trusted partner at our side on our path to success.” **FBA**



Upgraded from previously 400 kegs/h, the *Innokeg Contikey* line now handles 1,000 kegs/h.

This article is written by: Mr Jaroslaw Niebisch, KHS AG’s sales manager in Ukraine and Ms Ludmila Enke, general manager of KHS Ukraine.