

TEKNOSAVO

WOODCHIP

Teknosavo's customer magazine

TURN MILLS' CAPACITY TO THE NEXT LEVEL

Almost every pulp mill is practically working automated, but not all of them utilize process optimization systems. Digitalization enables higher competence as the processes are coordinated efficiently in real-time. Besides the enhanced productivity in wood handling, accurate data of the raw material quality is a valuable asset.

In a global level, many mills are equipped with high-class technology. For long-term market success, initialization of new equipment and technologies might not be adequate. Due to the competitive market space, the relevant question remains - how all equipment can be fully utilized and what types of services are available to them?

TOP-NOTCH SYSTEM AND COMPREHENSIVE SERVICE IN THE SAME PACKAGE

Teknosavo is globally known for our optimizing solutions, WoodSmart™ control system and Smart measurement devices, that provides wood handling and pulp manufacturing companies' versatile competitive edges. "Our core competencies are automation, electrical, software, and mechanical engineering as well as delivering turnkey solutions for wood processing optimization needs. We enable flexible improvement for process productivity regardless of the mill's current equipment", tells **Hannu Hämäläinen**, the CEO of Teknosavo.

FULL-SCALE SOLUTIONS CREATE SIGNIFICANT SAVINGS

Optimization ensures efficient use of wood material by eliminating waste and increasing total capacity. The

"Teknosavo's solutions enables the production to be optimized to the highest level, bringing a clear competitive advantage and savings to the material handling of the wood processing industry worldwide."

homogenous process guaranteed by our technology also reduces the cost of chemicals, energy, and labor.

On this scale, as the annual amounts of wood processed in pulp industry account for many million cubic meters per debarking plant, even a one percent decrease in raw material loss is a significant saving. Therefore, optimization

savings can often be calculated in millions of euros. "We have great results and references worldwide. For example, a modern pulp mill in Mönsterås, Södra Cell, invested in Teknosavo's systems in 2016. Autumn 2018 the chip quality measurement device, ChipSmart™ 3D was installed at the place", and WoodSmart™ optimization system was installed to Holmen Paper Hallsta mill in 2018", Hämäläinen tells about the outcomes.

"Teknosavos' solution enables the production to be optimized to the highest level, bringing a clear competitive advantage and savings to the material handling of the wood processing industry worldwide. Monthly priced service guarantees optimization results for production throughout the contract period.

"Our agreement includes optimizing the customer's debarking process as a whole, including analysis, necessary equipment, reporting, and continuous maintenance. A solid priced, monthly billed optimization system is an easy solution for customers to streamline their operations and achieve significant savings", concludes Hannu Hämäläinen.

TEKNOSAVO'S SYSTEM KEEPS THE PRODUCTION ON TRACK!



NEXT-GENERATION DEVICES

With the extensive R&D programs developed in close cooperation with our clients, we continue to bring next-generation on-line measurement systems to the market. This work has led to a full product family that serves our customers' diverse needs and specifications.



CONSULTING SERVICES

Our consulting services provide our clients with know-how gathered during many years of experience. We assess our client company's operations, quality of wood and chip preparation process to ensure high-quality end results.



CERTIFIED QUALITY

In order to fulfill our promises to our customers, we have developed an internal quality system for our operations, which has been credited with the ISO 9001 certificate. We are committed to providing our staff with training programs to keep up with the latest developments in the industry.

HOLMEN PAPER HALLSTA MILL OPTIMIZED DEBARKING PROCESS WITH TEKNO SAVO

Holmen Paper Hallsta Mill in Sweden ordered Teknosavo’s WoodSmart™ optimization system in the summer of 2018. The system consists of five measurement devices and two computers for monitoring and controlling of debarking process to reach a clean high-quality final product and reduced woodlosses. The system is connected to the mill's DCS.

A few years ago, **Lars-Håkan Jansson**, process engineer at Holmen Paper Hallsta Mill heard about Teknosavo and WoodSmart™ at a conference. There was a need for improvements in Hallsta mill because, before the installation of WoodSmart™, the mill had limited automation in debarking and no online measurements of the debarking degree and woodlosses. The process in the mill is TMP (Thermomechanical pulp) and therefore the bark content in chips must be low. This typically means also relatively high woodlosses in debarking. The reduction of woodlosses would mean lower consumption of raw materials and energy. It would be beneficial to savings and environmental aspects.

Mr. Jansson gathered more material from WoodSmart™ and got also additional information from another mill in Sweden, where the system has been successfully in use. This led to research work and negotiations, that resulted in the agreement. Installation was made in September 2018. WoodSmart™ optimization system in Holmen Paper Hallsta Mill includes laser-based FillSmart™ for measuring drum filling degree, ProfiSmart™ to measure the share of wood in relation to bark on the bark conveyor, BarkSmart™ that measures percentage of bark in relation to the wood surface on logs after the debarking drum, LogSmart™ to measure the wood flow on the drum chipper line, and an acoustic meter that measures the amount of logs in the drum infeeding conveyor.

The whole WoodSmart™ system was implemented only by a few steps in the production. Commissioning and training of personnel followed right after installation, and the take-over of the system was in the first half of October 2018.

GOOD RESULTS RIGHT FROM BEGINNING
Even though there was a need for improvements in the Hallsta mill, there were doubts in operator workers towards new measurement systems. There were suspicions, how the WoodSmart™ system, which was installed on a fast schedule, could immediately start producing the right information for mill optimization. Experienced operator **Tomas Karlsson** was one of skeptic workers.

Together with his colleagues, he was very doubtful when they first heard that a new measurement and optimization system will be installed. But already during commissioning, in October 2018, his mind was changed when he saw the results. The reduced woodlosses could be seen by only looking at the bark conveyor behind the control room



Process engineer Lars-Håkan Jansson is satisfied with the optimization results of WoodSmart™.

window. “WoodSmart™ enables the operators to concentrate more on other important tasks. Co-operation with Teknosavo has gone surprisingly well”, says Mr. Karlsson.

Mr. Jansson is also very happy with WoodSmart™. “There has been a considerable decrease in woodlosses maintaining low bark content in chips, and energy consumption per debarked ton in drum motors has dropped.” As one other advantage Mr. Jansson mentions the fact, that



The writer of this article, Timo Alasuvanto (left), has worked as Teknosavo's project manager at Holmen Paper Hallsta Mill. Right operator Tomas Karlsson from Hallsta Mill.

HOLMEN

ABOUT HOLMEN PAPER HALLSTA MILL

Holmen Paper Hallsta Mill is a part of Holmen Group and it is located 100 km north of Stockholm. The mill has one debarking line which uses annually approximately 1,2 million sold cubic meters of round softwood. The two paper machines at Hallsta Paper Mill produce LWU paper and a range of special qualities of wood-containing printing paper.

- Raw material: Spruce pulpwood
- TMP (Thermomechanical pulp)
- Products: LWU (Light Weight Uncoated) paper, and book paper

Environmental values are very important to Holmen Group, for example it owns windmills next to Hallsta mill. Wood-Smart™ optimization system also contributes to these values.

the operators discuss now much more about woodlosses as they can see real-time values all the time on DCS screen. And of course, WoodSmart™ provides new KPI's for factory management. During the first three months in operation, there have been only two short stops, otherwise the debarking has been 100% running with WoodSmart™.

FLUENT CO-OPERATION

According to Mr. Jansson the co-operation with Teknosavo Oy, which has mostly been done in Swedish language, has been very good. Especially daily communication between the operators and Teknosavo has been praised.

Timo Alasuvanto has worked as Teknosavo's project manager at Holmen Paper Hallsta mill. "Working together with nice and helpful people at Hallsta mill has been a good experience. And of course, getting very good results has naturally been rewarding. Furthermore, happy customers are our company's best salesmen", says Mr. Alasuvanto.

The co-operation between Teknosavo and Hallsta mill continues in a form of the service contract. This includes monitoring and adjusting the system weekly via remote connection as well as regular service visits. This enables maintaining and further improving the results.

“With a monthly contract, the benefits of the WoodSmart™ optimization solution are immediately available”



WOODSMART™ OPTIMIZED PRODUCTION ENABLES CLEAN AND HIGH-QUALITY PRODUCT

Online measurement system enables monitoring and controlling of debarking process to reach a clean high-quality final product, significantly reduced wood loss and energy savings.

Teknosavo can provide a comprehensive service, which includes the whole optimizing solutions with the entire automation solution with its measuring equipment and software as well as maintenance services. WoodSmart™ can be installed in any existing or new woodrooms.

SERVICE AGREEMENT

A solid priced, monthly billed optimization system is an easy solution for customers to streamline their operations and achieve significant savings. Teknosavo guarantees optimization efficiencies throughout the contract period. The agreement includes technology solutions, maintenance, and spare parts as well as customer support around the world. With the agreement, the customer has always the latest technology and the real-time production reports available.



TEKNOSAVO FINANCE
Helping customers in investment processes

Teknosavo Finance is Teknosavo's own financing model and is registered as part of the company's operations. We offer a finance model in 14 countries around the world.

Teknosavo Finance makes investment-making more easier. With our financing model, the investments do not burden the customer's accounting period as a one-time load. It may also include the redemption of existing equipment in use. The finance model enables us to tailor customer-specific equipment investment needs, maintenance, customer support, and equipment development and renewal during the contract period. The contract period is customized separately for each customer. Teknosavo Finance can be linked to WoodSmart™ and ChipSmart -investments but also to individual Smart-devices.

It is advisable to make the maintenance agreement as a part of the financing model, as then it includes the continuous updating and development of equipment and applications. In this way, the customer is constantly using the latest technology and gets the best customer support just according to wishes. With Teknosavo's solutions, the operating personnel can focus on production control instead of continuous manual control.

30 YEARS IN WOOD PROCESSING OPTIMIZATION BUSINESS

During thirty years of operation, Teknosavo has delivered highly sophisticated technical know-how in wood processing industries around the globe. The genuine inspiration to enhance the client's processes has been scaling to further development and investments for the future.

Teknosavo was founded in 1988 and started business by **Hannu Hämäläinen** in 1989 in Savonlinna, city in Southern Savonia. The office located above the bus station in city centrum, where first employees started their career path, **Mrs. Hanna Matilainen** among others. Hanna Matilainen is currently working as an operative manager. She has been working in Teknosavo in different roles since the beginning.

"Initially, the company concentrated to provide electrical automation engineering to process and manufacturing industries. Soon after, software and mechanical engineering came along as services. Meanwhile, we were delivering technical solutions as a subcontractor for industrial companies, we also started to develop products and solutions of our own", Matilainen tells. The first intelligent device, WoodSmart™, was made for wood barking optimization was launched in 1994. The scanners, BarkSmart™, and ProfiSmart™ were launched already four years later.

REWARDING BUSINESS

The business growth was highly positive, and in 2001 Teknosavo's CEO Hannu Hämäläinen was rewarded as the entrepreneur of the year by Savonlinnan Seudun yrittäjät ry (Association of entrepreneurs in Savonlinna area). In 2003 Teknosavo was awarded again with local Innosuomi reward due to its innovative product development.

These recognitions have been given for prompt work. "Since the beginning, we have committed to provide next generation devices and consulting services with certified

quality. The business evolves constantly due to advancing technology, such as measurement systems, camera optics, and lasers. Therefore, we regularly upkeep our existing product range meanwhile we develop updated versions and new solutions. Furthermore, we always deliver holistic service for the customer to ensure the full advantages of their investment", Hanna Matilainen defines the philosophy of the company culture.

CHALLENGES AND INTERNALIZATION

Beginning of 2000 century Teknosavo had premises in two cities, Järvenpää and Savonlinna. However, the global banking crisis had an impact also on Teknosavo, and the premises in Järvenpää needed to close in 2008. On the same time, development work was given a lot of effort. "All our devices in the product range have a name with Smart-ending. It resonates that desirable things are accomplished with acting intelligently," Matilainen says.

From the beginning, Teknosavo has focused also on international markets. The first export deliveries were to Sweden and the USA. Now the most distant customers are located in Chile. "We have gained a thorough knowledge of our large-scale clients' target processes in the global market landscape. In honor of the celebration, the Teknosavo announced the new version of ChipSmart 3D™ that examines the quality of wood chips. It is a great way elevate the global processing industry to the next level", concludes Matilainen.

With 30 years of experience in processing industry, Teknosavo leads the markets in optimization technology in Scandinavia.

- 2008 QualitySmart™ official wood volume control measurement station.
- 2003 ChipSmart™ chip measurement device
- 2002 StoneSmart™ stone detection system
- 2001 Complete WoodSmart™ product family for Nordic wood species.
- 1998 The first optical BarkSmart™ and ProfiSmart™ scanners are developed.
- 1994 The first WoodSmart™ is developed.



Photo above: Hannu Hämäläinen (right) and Erkki Tynkkynen testing roll packing machine at Saimatec Engineering in Savonlinna year 1991.



Below: Hannu Hämäläinen got a lift in the paper mill factory area in China year 1996.

TEKNOSAVO NEWS IN BRIEF

PLANS FOR NEW PREMISES IN SAVONLINNA TECHNOLOGY PARK

Teknosavo Oy is planning a major investment in business premises at Savonlinna Technology Park. On November 28th 2018, CEO **Hannu Hämäläinen** and Mayor of Savonlinna, **Janne Laine** signed a letter of intent concerning the construction project location on the land leased by the city. The construction project is planned to start in spring 2019.

The realization of the project still requires the receipt of an investment grant and a positive decision from the ELY Centre (Centre for Economic Development, Transport, and the Environment) The construction investment of more than 1,000 m² is about EUR 1.5 million and, if realized, would increase the number of Teknosavo employees by about 20 people.



Teknosavo's CEO Hannu Hämäläinen (left) and Mayor of Savonlinna Janne Laine.