



SAVCOR

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Sustainable solutions to our customers



Rising raw material and energy costs, tighter margins and constant changes in business environment and company structures are setting high requirements for today's industry. How to maintain and strengthen own competitive edge in this environment? Production efficiency and cost effectiveness are playing the key role in this exercise. And energy efficiency and carbon footprint are also meaningful measurements when companies consider their actions.

Savcor has taken this challenge to provide solutions helping our clients to sharpen the competitive edge by improving cost efficiency in production processes. As a result of this Savcor has been recently awarded by many very remarkable projects, such as Ohjas ERP project with Finish State Forests, Metsähallitus and Wedge process

performance improvement project with a German board manufacturer, Propapier, Eisenhüttenstadt mill in Eastern Germany. Customer is very happy with the initial positive results gained since last fall.

The Ohjas project is very remarkable project for Savcor due to the magnitude. Savcor is utilizing this opportunity to strengthen our technological competence by recruiting new resources to Forest Systems team.

Our applications to process diagnostics, enterprise resource planning and also in corrosion prevention support out long term vision how to help our customers to achieve their goal.

CEO Jukka Rautiainen
Savcor Forest Group

News in breaf:

MekaERP put to use in the Pihlava sawmill

Sawmill company Westas Group has acquired enterprise resource planning system for the Pihlava sawmill from Forest Systems.

ERP- system was delivered January 2014. After that the project moves to maintenance phase.

Raunio and Pihlava sawmills are part of the Westas Group. Raunio sawmill has been Savcor's client since year 1999. Pihlava sawmill took the system just last month. Wood procurement systems has been in use both sawmills for many years.



Big Wedge sale in Chile

Arauco's Nueva Aldea pulp mill has acquired first Wedge to Chile. Aim of the Arauco is to increase runnability and capacity efficiency from the pulp plants. Customer believes that Savcor Wedge is powerful tool to identifying causes of process disturbances and optimizes the process.

Nueva Aldea is biggest pulp mill in Arauco group. It produces million ton of pulp each year. Company has four other mills in Chile and one in Argentina. Altogether six mill produces 3,2 million tons pulp each year. Arauco is one of the prominent pulp mill company in the world.

The contract is first big Wedge deal in Latin America. The first training session will be held in middle of May.

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Photos: Jari Suihkonen



Eucalyptus is the primary raw material of the pulp and paper industry in both South America and Southeast Asia.

Brazilian forests are growing rapidly

The forest industry is booming in Latin America. Thanks to a favorable climate, eucalyptus can be harvested exceptionally quickly for further processing. Savcor Limitida is actively involved in developing forestry information management systems in Brazil, Chile, Argentina, and Uruguay.

The company's clients include producers of pulp, forest growers, and steel mills. **Jari Suihkonen**, the managing director of Savcor Limitida, based in Brazil, says that the company's clients have shown great interest in the Zenith forestry information management

system. With the system, the client can manage and optimize their forestry processes, from the purchase of land to the cultivation and harvesting of the forest, to the processing of wood. – Zenith's strong point is its suitability for the management of various types of

forest. The system can be modified to meet the forestry management needs of large pulp producers and small forest growers alike. Zenith has proven to be a handy and cost-efficient tool for managing forests in South America, explains Suihkonen.

Fast-growing eucalyptus

Eucalyptus is the primary raw material of the pulp and paper industry in both South America and Southeast Asia. Brazil has approximately 7.2 million hectares (17.8 million acres) of cultivated eucalyptus and pine forests, with

eucalyptus plantations accounting for about 77 percent of the total area. This share is growing at the rate of around two percent a year. Roughly 35 percent of the annual yield of the cultivated forests is used as raw material in the production of pulp and paper. Around 20 percent is used as lumber, while 15 percent goes to produce wood coal.

On average, eucalyptus is ready for harvesting after six years, with an annual yield of around 42 cubic meters per hectare (600 cubic feet per acre), an average that is expected to increase to 50 cubic meters (715 cubic feet) in the future.

Pulp from cultivated forests

The booming forest industry also offers Savcor Limitida scope for growth. Pulp production is expected to reach 20 million tonnes (22 million tons) annually by the year 2020. Several new, large pulp mills are being planned in Brazil, increasing the demand for cultivated forests.

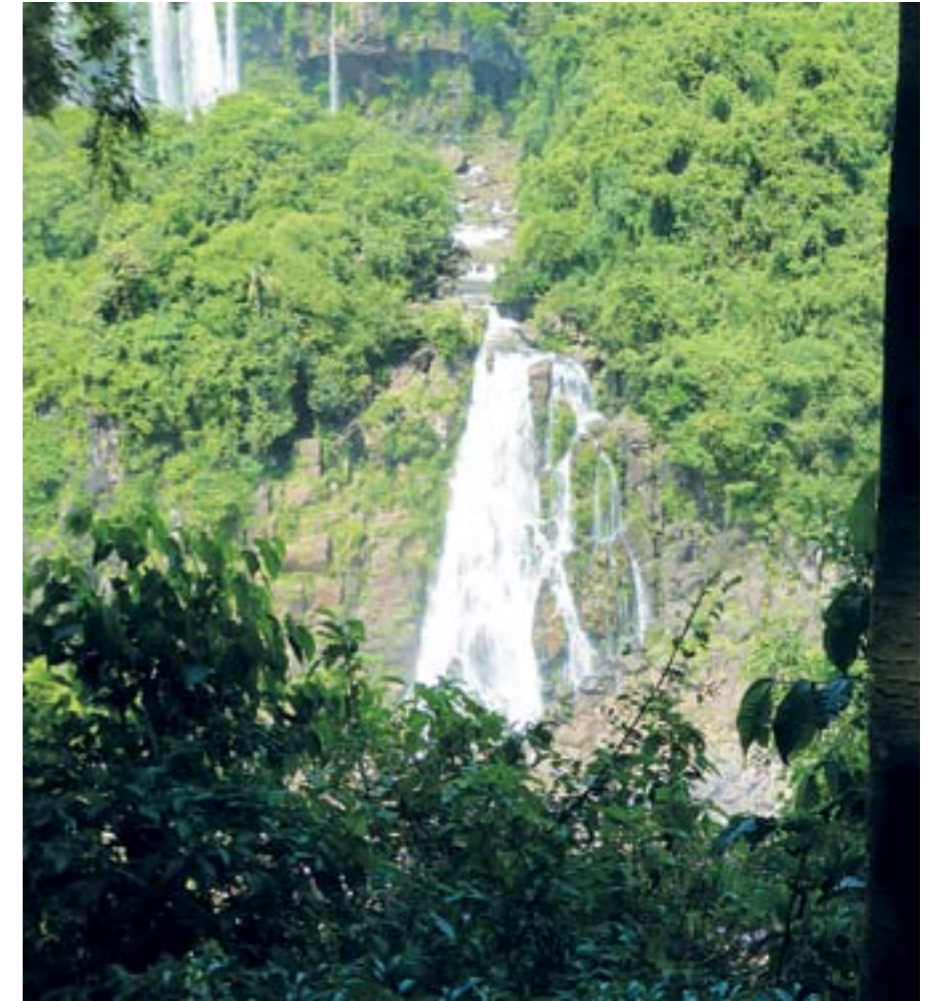
– Brazil is among the top three pulp producers in the world. Over the last decade, the industry has grown by 5.7 percent as export to Asia and Europe has increased, explains Suihkonen.

Land value on the rise

Steel companies currently own over a million hectares (more than 2.47 million acres) of plantations. To ensure that enough wood coal can be produced from cultivated trees to meet the



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Land prices have been on the rise in Brazil, Uruguay, and Argentina.

industry's needs, this area should be doubled.

– Land prices have been on the rise in Brazil, Uruguay, and Argentina. The productivity of land must be improved, regardless of the species cultivated. Well suited to optimizing cultivation processes for forests of various types, the Zenith program is the perfect tool

for all wood producers, regardless of the scale of their operations.

Wedge becoming more popular

Savcor Limitida's other top-seller on the Latin American market is Wedge, a process diagnostics tool, which helps production facilities in all fields to improve their efficiency.

Wedge makes it possible to combine information from different databanks into a compact data package, which can be used to optimize and develop all phases of industrial processes.

– Wedge's popularity is experiencing significant growth, and we have just received a large order from Chile. The implementation of the new Energy Diagnostic and Profile Diagnostic features has opened up new dimensions for utilizing the tool, says Suihkonen.

Wedge makes process analysis easy

The diagnostics tool identifies production bottlenecks without delay

Yara Suomi Oy, a leading producer of mineral fertilizers, is improving and streamlining its production processes. With the Savcor Wedge process diagnostics tool, the company's phosphoric acid plant in Siilinjärvi collects valuable information on its processes and identifies any bottlenecks in the production processes without delay.

– Technical reliability increases safety at work, which we greatly value. When the plant's processes run smoothly, orders are completed on schedule and efficiency is improved in a controlled manner, explains the Siilinjärvi plant's manager, **Taisto Koivumäki**.

Yara operates five plants in Siilinjärvi, in the Northern Savo region: a mine, with its concentration plant, and facilities producing sulfuric acid, phosphoric acid, fertilizer, and nitric acid. How smoothly each unit's production processes run has a knock-on effect on the other plants.

– Between an order and delivery lies the production, which is probably the

most vulnerable part of the process. With the Wedge analysis tool, we can monitor the entire process from start to finish and perform more thorough analysis of the phases where problems occur, says Koivumäki.

Information on efficiency

Yara's phosphoric acid plant tested the Wedge program in 2013, obtaining encouraging results. After this successful test run, the plant decided to acquire the tool for permanent use. If the first year with the new program goes as well as expected, other units too may start using Wedge.

– We are interested in obtaining data on the efficiency of all of the plants and gaining an overall picture of our production processes. This would provide us with valuable information on the entire production chain, from the mine to the fertilizer plant, explains Koivumäki, adding that acquiring Wedge is part of the company's reliability assessment process. Being able to predict any problems that may occur helps to improve the efficiency of production.

– With Wedge, we can select the variables we want to monitor and test their impact on the production process as a whole. We have always received user support from Savcor when we have



Yara operates five plants in the Northern Savo region in Finland.



Savcors Sampo Luukkainen and Erkkä Hautamäki and Annika Viikki from Yara checking the plant.

needed it, even though the tool is really easy to use, Koivumäki says.

Yara's production units have implemented automation systems that record the most important process measurements but do not give access to more detailed information. Wedge, on the other hand, provides information on the relationships between various measurements, which makes it easier to control one process variable in relation to another.

An easy-to-use application

Development engineer **Annika Viikki** is one of Wedge's main users at Yara. She says that the process diagnostics tool makes her day-to-day tasks easier and has also given rise to new development ideas.

– Wedge is extremely easy to use. It has been simple to adapt the application to suit our purposes. We are always looking for the most efficient model for running our production processes, and

Wedge has helped us reduce wastage. The tool also completes the analysis really quickly, she says.

During Wedge's trial run, Yara's and Savcor Oy's application experts joined forces to study the production processes.

– The collaboration has been fruitful and the trainer, **Sampo Luukkainen**, has

understood what we are looking for.

– Our joint workshop sessions have provided us with good tips on how to carry out the analyses and make the most of the tool. My own Wedge skills have come on in leaps and bounds, and I can now use the diagnostics tool to look at even more factors affecting production, explains Viikki.

Plant manager
Taisto Koivumäki.





The Ohjas system will be used for planning and monitoring of trade in wood, harvesting, bioenergy production, silviculture, and transport processes.

Ohjas system to streamline forestry business management

Metsähallitus, a Finnish government enterprise responsible for managing state-owned forests, has acquired an enterprise resource planning system, Ohjas, from Savcor Forest Oy. Ohjas will replace older information systems used by Metsähallitus, thereby bringing forestry operations to a new level.

—Our main goal is to manage and strengthen the resource planning of forestry business operations by having only one system, says **Heikki Savolainen**, the director of forestry at Metsähallitus.

The Ohjas system will be used for planning and monitoring of trade in

wood, harvesting, bioenergy production, silviculture, and transport processes. Reporting and management of financial transactions related to these processes will also be handled with the system. In addition, the system will relay information on business processes between Metsähallitus and the relevant enterprises. The Ohjas system delivery

contract includes user support and maintenance services.

The overall package as the deciding factor

Savcor is a long-term partner and system supplier for Metsähallitus. The

“The strengths of Metsähallitus include modern information systems, flexible deliveries, and environmental expertise. Ohjas will help us use the available information more efficiently and plan our operations even better.”

planning process for the Ohjas project is underway, with the new system set to be fully up and running in December 2015.

- This is a large-scale reform; therefore, we wanted a partner with enough expertise and know-how in the field. The skills of the staff and the company's

references were also important criteria in the decision, explains Savolainen.

Savolainen emphasizes that the project's schedule is tight, making good project management and regular communication essential.

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Savcor Forest Oy's CEO, **Jukka Rautiainen**, is pleased that the long-standing collaboration with Metsähallitus is expanding.

— I am very happy to know that Metsähallitus trusts our expertise and has selected us to supply a central system. We already have all the key resources required for the project and are in the process of hiring more personnel.

According to Rautiainen, it is important that Metsähallitus reap all the benefits it is hoping for from the reform.

— The collaboration also gives Savcor an opportunity to hone its technological expertise to perfection, he explains.

Benefits for the various provinces

Metsähallitus delivers 6.1 million cubic meters of wood a year to its clients, amounting to around 10% of the wood used by the industry in Finland.

The clients include around a hundred sawmills, alongside pulp and paper plants.

— We operate in the provinces, bringing in 2,200 man-years of work. Forestry is one of Metsähallitus's key business activities. Most of our forests are managed for multiple uses, so we also consider recreation use, natural diversity, reindeer herding, employment impact, and Sami matters in all our operations, says Heikki Savolainen.

Jukka Rautiainen a CEO of Savcor Forest and the director of forestry at Metsähallitus, Heikki Savolainen signing the contract.



A development partner for packaging board

Stora Enso, the world's largest manufacturer of board and paper, has chosen Savcor as its development partner. Stora Enso uses the process diagnostics tool Wedge and MAF microbial control tools in its R&D and production units at the Imatra Mills.

– Wedge can be compared to a shared language for process researchers, production developers, and production managers and supervisors. The clear graphical presentation of data makes the information easy to interpret, explains the IT manager of the Imatra Mills, **Antero Lattu**.

Stora Enso's board and paper mill in Imatra comprises two units, Kaukopää and Tainionkoski, which together employ around 1,000 people. The facility has an annual capacity of more than a million tons of cardboard and paper, over 90% of which is exported. Europe

is the main market, but Southeast Asia also accounts for a large proportion of the export volume.

Cartons and packaging

The Imatra Mills produces both paper and cardboard. Stora Enso's board for liquids' packaging is used to produce such items as milk and juice cartons, while the food packaging board is used for drinking cups and various foods.

Other kind of packaging board is used in production of packages for food,

confectionary, and cigarettes. The graphical board made at the mill is very suitable for cards, covers, and luxury packaging.

– Almost every mill has a unique structure, and also plants' product range varies. Systems and applications facilitating production at board and paper mill must be adaptable, so that they can be customized to meet mill-specific needs. Otherwise, they are of no use, explains Lattu.

“Stora Enso requires top-notch products and expertise from its partners and expects them to strive to develop their operations continuously.”



Imatra Mills has an annual capacity of more than a million tons of board and paper, over 90% of which is exported.



Joanna Rahko and Antero Lattu work at Stora Enso Imatra Mills.

Photo: Haaja & Arwo Design Ltd.

Expert partners

Wedge's analysis and measurement applications have already helped the factory's process engineers and researchers to develop more efficient production methods, identify causes of deviations in quality, and improve production processes.

– Stora Enso requires top-notch products and expertise from its partners and expects them to strive to develop their operations continuously. This is what we expect also from ourselves. On the whole, Savcor has the same traits as Wedge: it is an adaptable and innovative partner, Lattu praises.

A convenient and hassle-free tool

Joanna Rahko, a production engineer at the pulp mill, has been using Wedge for several years. She finds it a handy tool for synthesizing and analyzing data for various phases of production.

– You can, for example, exclude production stoppages from the data and look at just the relevant information for a particular production phase. Compared with other trend analysis tools, Wedge makes it easy for us to perform calculations ourselves. Another brilliant aspect of the tool is that it allows us to take production delays into account, explains Rahko.

Adaptability and customized functions Stora Enso development manager Jari Räsänen says that the collaboration kicked off with corrosion prevention for the pulp mill's fiber line. It continued with close cooperation for full process hygiene.

– We carried out a joint study to analyze the performance of the technology. Introducing activities related to food-

grade hygiene for a paper machine unit was a big step. The collaboration has been successful, and everything has gone as planned, says Räsänen.

The purity and quality standards applying to food packaging board are very strict. With the technology provided by Savcor, it is easier to ensure that the quality remains consistent.

– Adaptability and thorough understanding of our area of business number among Savcor's strengths. It is vital that the applications can be adapted to work in combination with the systems we already have in place, Räsänen explains.



In debarking station is very good scent of fresh wood.

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