

optinex

# Optimization for the entire WOOD VALUE CHAIN



**The wood processing industry is at a crossroads, facing challenges that affect profitability and sustainability.**

**Sawmills struggle with fluctuating raw material supply and prices, varying log qualities, and the need to optimize product mix.**

**Inefficiencies, bottlenecks, and complex inventory management often drive up costs and reduce economic yield.**

Optinex covers the entire value chain within the sawmill and wood products industry.



RAW MATERIAL SOURCING



LOG SORTING



SAWING



RAW SORTING



KILN DRYING



DRY SORTING



PLANING



GLULAM



CLT

# Optinex: Your Strategic Partner for End-to-End Value Chain Optimization

Optinex is a cutting-edge, cloud-native planning and optimization solution meticulously designed for the entire value chain within the sawmill and wood products industry (mass timber). It offers a holistic view of your sawmill value chain, providing comprehensive support from procurement through production, inventory, and logistics to the ultimate customer experience.

Optinex provides a digital twin of your operations, empowering data-driven decision-making across all levels.

Optinex operates across strategic, tactical, and operational levels, covering multiple time horizons and every step in your process. Its primary goal is to maximize your bottom line.

Optinex equips sawmills to flexibly respond to opportunities and overcome challenges by intelligently balancing working capital costs with potential lost sales, and optimizing processes through swift, informed decisions.

## Transformative benefits you can expect with Optinex:

- ▶ **Increased Economic Yield:** Maximize the value extracted from every log.
- ▶ **Increased Total Production:** Boost your output and efficiency.
- ▶ **Lower Stock Levels:** Optimize inventory to reduce carrying costs and improve cash flow.
- ▶ **Better Order Fulfillment Capability:** Enhance your ability to meet customer orders reliably and on time.
- ▶ **Increased Productivity & Reduced Manual Work:** Streamline operations by replacing manual processes and traditional spreadsheets with an advanced AI optimization system.
- ▶ **Quick Scenario Generation & Differential Analysis:** Rapidly evaluate diverse planning scenarios to make informed, unbiased decisions.
- ▶ **Common Tool for Marketing and Production:** Foster alignment between sales and operational teams for synergistic outcomes.
- ▶ **Optimized Net Profit:** Achieve the highest possible net profit through intelligent budget planning.



### Advanced Features & Strategic Impact

Optinex provides a powerful, integrated toolset that enables sawmill planners to model production capabilities, simulate saw settings, and calculate optimal production plans. By integrating crucial financial data—such as production costs and prices—with raw material supply information, Optinex allows for an unbiased comparison of different operational scenarios with a simple click of a button.

### Technology, Security & Integration

Optinex is more than just a planning tool. It is a technically advanced, cloud-native application built with modern architecture and stringent security standards, ensuring seamless integration, reliable performance, and scalability. It's designed to solve unique optimization with IBM Watson optimizer; this can replace traditional manual efforts using Excel sheets.

### State-of-the-Art Technical Architecture

**Cloud-Native & Serverless:** Built on Microsoft Azure using a serverless architecture, Optinex ensures exceptional scalability and efficiency.

**IBM Watson Optimization Engine:** The core optimization engine leverages IBM Watson, utilizing Decision Optimization and AI modeling to support multiple optimization use-cases. This allows for custom optimization models tailored to specific customer needs, offering both customized optimization and standardized solutions.

**Multi-Tenant Application:** Designed as a multi-tenant solution, Optinex supports planning and operations across multiple sites and complex intra-organization flows, with separate databases per tenant to provide maximum data separation and security.

**Modular Design:** Optinex is modularized, enabling its components to be integrated into existing customer infrastructure or deployed as standalone solutions. Key components include a Web Application (Main UI), REST-based API, an Integrations Engine for custom outbound integrations, and an Angular App for Shop Floor Control.

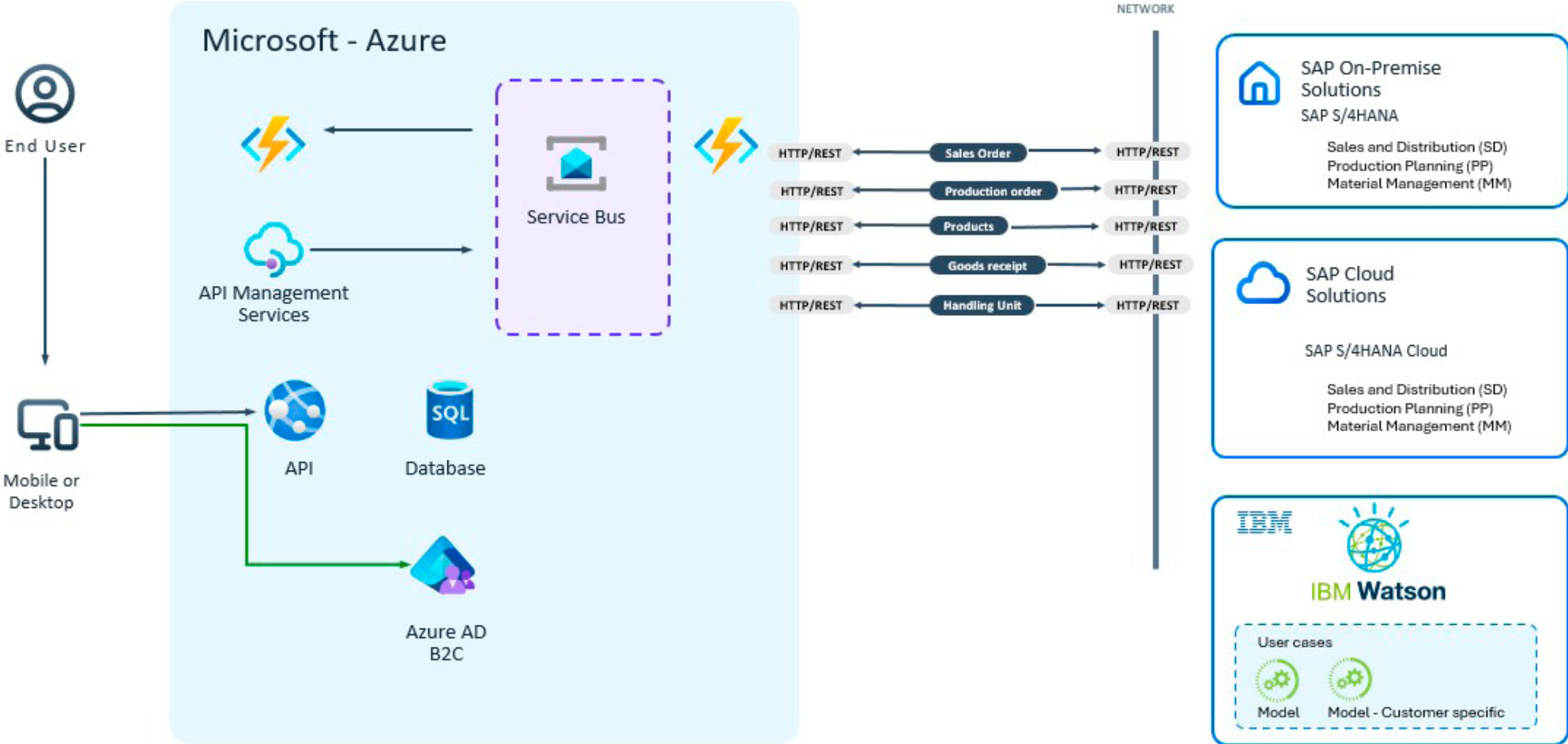
### Robust Security & Compliance

**End-to-End Encryption:** Complies with modern security best practices by implementing end-to-end encryption for all data, both in transit and at rest.

**Data Protection & Storage:** All data is stored and processed adhering to best-in-class data protection standards.

**Secure Development Lifecycle (SDLC):** The product adheres to a secure software development and operational cycle, safeguarding against common vulnerabilities such as SQL injections, memory corruption, and information leaks. It also offers configurable authentication policies for enhanced security.

# Technical Architecture of Optinex



## KEY FEATURES AND CAPABILITIES DRIVING BUSINESS TRANSFORMATION

**Log Class Optimization & Saw Setting Management:** Evaluate optimal log classes and side board configurations to utilize and define log classes to maximize yield based on real stock, machine, and price data. Create and evaluate new cutting patterns for both volume and economic return using virtual logs and saw line capacity, considering saw blade width and curve sawing capabilities.

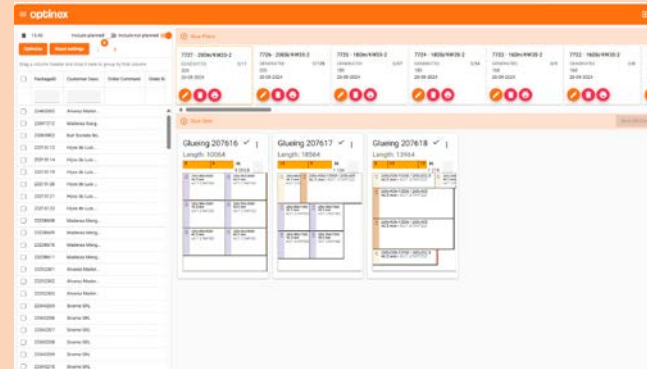
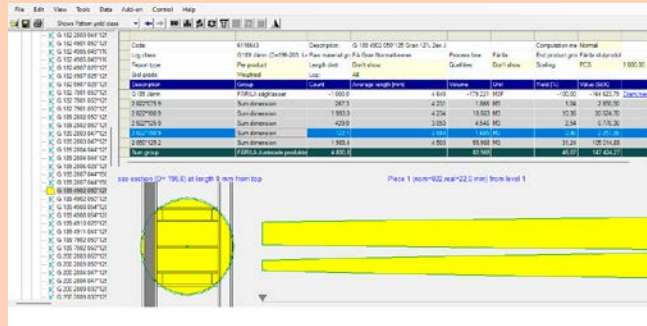
**Budget Planning:** Supports comprehensive sales and operations-oriented budget planning. Input market demand forecasts, raw material supply, and machine capacity to instantly evaluate new scenarios and maximize net profit for the upcoming period.

**Operational Planning:** Generates tactical plans for operational execution, guiding the creation of production orders to balance demand and inventory.

**Production Planning with Integrated Optimization Tools:** Create and maintain balanced production plans across all process steps, balancing inventory and demand over time. The system supports both push and pull production, with continuous optimization ensuring the plan remains updated.

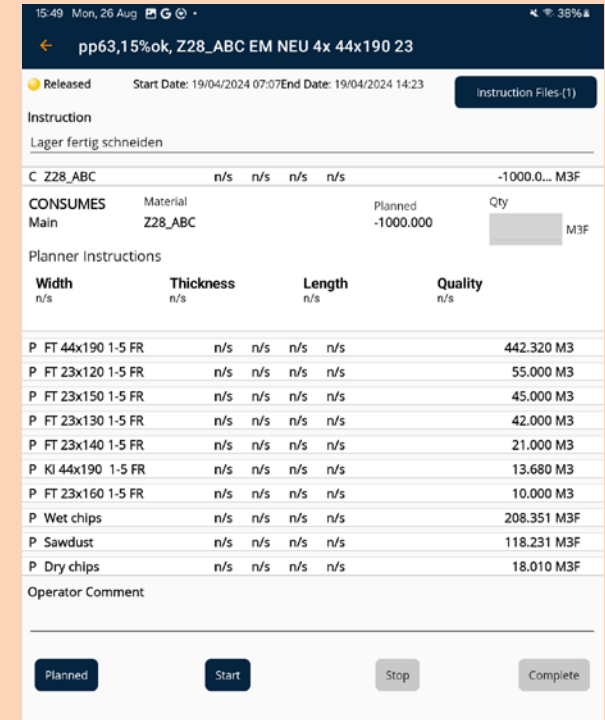
**Investment Analysis & New Products/Product Mix:** Analyze potential investments and determine the optimal mix of new products to drive profitability and strategic growth.

**Bottleneck Analysis & Productivity/Lean Management:** Identify and address production bottlenecks, facilitating the implementation of lean management practices to enhance overall productivity.



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**Specialized Modules for Engineered Wood Products:** Optinex offers customized planning modules specifically for Cross-Laminated Timber (CLT) and Glulam production, providing dedicated functionality to optimize machine utilization, reduce waste, and increase total throughput for both static and continuous operations. This aligns with the industry's growing focus on advanced wood products.



**Mobile App for Production Orders:** A fully integrated mobile application empowers operators to overview, execute, and report production orders, including production quantities, start, and stop times, directly from the shop floor.

# Modules for planning and optimization in Optinex



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### Tactical planning

This module enables strategic planning over a 12–24 month horizon. By combining sawmill simulation with a tactical planning model, an effective Sales & Operations Planning process is achieved. This balances demand with raw material availability and capacity.

### Operational planning

Optimizes and streamlines daily production through real-time scheduling, efficient resource utilization, and bottleneck management. It adapts to current orders, machine capacity, and material availability while integrating seamlessly with ERP systems.

### Shop Floor Control

Shop Floor Control monitors and manages production activities directly on the floor in real time. It tracks work progress, machine performance, and labor efficiency to ensure smooth and efficient manufacturing operations.

### Glulam

The solution offers planning modules for glulam production, with dedicated functionality for both static and continuous operations. It includes optimization models to generate glulam plans, optimize machine utilization, reduce waste, and increase overall throughput.

### CLT

The module for CLT (Cross-Laminated Timber) solution provides advanced planning designed for both static and continuous production processes.



### Seamless Integration & Flexible Delivery

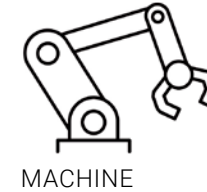
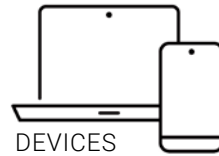
**ERP Integration:** Optinex is designed from the ground up for integration with external systems, including existing ERP implementations like SAP ERP and SAP S/4HANA Cloud solutions, leveraging standard REST APIs and custom integrators. This allows Optinex to enhance existing systems rather than replace them entirely.

**Software-as-a-Service (SaaS) Model:** Optinex is delivered as an online subscription service and a cloud solution, integrating with SAP cloud solutions via standard, SAP-approved interfaces and APIs.

**Proven Implementation Process:** The implementation typically takes 12-13 weeks, offering immediate business results that strengthen over time. This model reduces risk while ensuring a strong business focus and efficient delivery of value-creating solutions. User support is provided for installation, configuration, and use.

**High Availability & Global Readiness:** The solution achieves operational performance of 99.5% or higher, ensuring minimal service disruption with high availability and disaster recovery capabilities. It is also internationalized for global customers and localized for business best practices, including support for

## ERP INTEGRATION



ERP SYSTEM/  
SAWMILL SYSTEM

local currencies and translated user interfaces and documentation.

### Why Choose Optinex?

Optinex offers an unparalleled combination of intelligent optimization, cutting-edge cloud technology, and robust security, all specifically tailored for the complexities of the sawmill industry. By migrating from manual processes

and spreadsheets to an advanced AI optimization system, Optinex empowers you to make smarter, faster, and more profitable decisions, securing your competitive advantage in a dynamic market.



## Get in touch!

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# The Optinex Story

Every great innovation begins with a challenge. For the sawmill industry, that challenge has long been how to plan and optimize production in a world full of variables — from raw material and product mix to market demand and logistics.

That's where Optinex was born. Created by **Lars-Göte Johansson**, Optinex became a pioneering tool that helped sawmills see the bigger picture — connecting strategic, tactical, and operational planning in one intelligent system. Over the years, it has become an essential part of daily operations for leading companies in the industry in Europe.

When ForestX set out on its mission to digitalize and create value across the forest industry, the company quickly recognized Optinex as something special — a perfect match between technology, business understanding, and deep industry expertise.

“Optinex is exactly the kind of solution that fits our vision. It brings real value to sawmills by turning complex data into smarter decisions,” says Carl Barck, CEO of ForestX. Through the acquisition of Optinex in 2018,



Lars-Göte Johansson and Johan Eriksson, ForestX.

Lars-Göte Johansson joined ForestX, ensuring that the product's development continues with the same passion and precision that defined its beginnings.

“Optinex solves the true complexity of production planning in a unique way. With ForestX's strong industry focus and digital expertise, I

see great opportunities for growth — both in Sweden and internationally,” says Johansson.

Today, **Johan Eriksson**, CTO of ForestX, leads the continued development of Optinex together with a dedicated team of highly experienced software engineers, optimization experts, and wood industry professionals.