Smart Software

KNAPP

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KNAPP

Contents

1,800
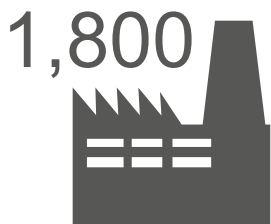
installations worldwide

2 startups
per week
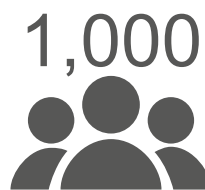
1,000

users

in the system at the same time

200

projects implemented annually

5 **milliseconds**
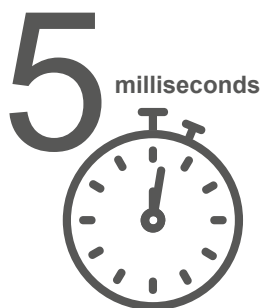
real-time processing for transactions
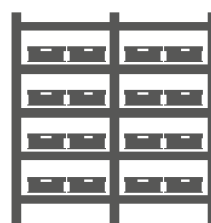
1Mio.
storage locations

1 second to choose the best

60,000 lines
picking performance in 1 hour

KiSoft–profile

Best-practice processes for highly specialized sectors

High level of standardization

Scalable solutions

Easy installation and expandability

Complete control and transparency

Roll-out solutions for more than one site

24/7 support in 12 languages

KiSoft
Smart software solutions

Flexibility trumps all

Intelligent interconnection, scalability, high flexibility and performance, as well as transparency in every process – these are the requirements for smart warehouses and smart logistics both today and in the future. Software is an invisible force in the warehouse. It connects and mobilizes warehouse technology and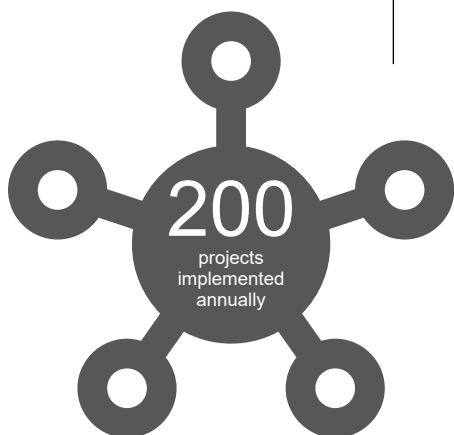 machines, and is a tool that ensures that optimized, individual and transparent processes in warehouse management are fully available at all times. Software is the digital gateway to future opportunities.

With over 3,700 employees, including **1,000 software experts** and 35 sites, KNAPP is one of the world's market leaders and provides intralogistics all-in-one solutions from a single source as solution provider. With its smart software solutions, KNAPP covers all software levels, from warehouse management to controlling individual optical sensors, thereby guaranteeing performance, productivity and transparency along the entire supply chain. Our product line **KiSoft**, short for **KNAPP Integrated Software**, and **SAP®EWM by KNAPP**, are tried and tested products that offer our customers the best of both software worlds. Decades of experience in automation, in-depth process and industry expertise, as well as current market demands and future trends have all shaped the development of the KiSoft portfolio and form the foundation of your software solutions.

From manual to fully-automatic processes – the comprehensive KiSoft features fulfil all requirements in the management and control of flows of goods and information. KNAPP brings modern and user-friendly **man and machine communication** into warehouse logistics by applying its innovative **easyUse interface** across all software levels. With the help of **KiSoft Analytics**, KNAPP is setting new benchmarks when it comes to digitalization and absolute optimization in the warehouse. Data analysis and applications, together with cutting-edge technologies such as **augmented reality** provide multi-warehouse and comparable performance measurements, including **condition monitoring** and **predictive maintenance**.

Investment
security

KiSoft

all-in-one logistic software

WMS
Warehouse Management System

WCS
Warehouse Control System

Goods-in processes

Inbound delivery planning
Goods-in processing
Storage

Processes in the warehouse

Internal transport
Replenishment
Stock rebooking
Inventory
Repacking

Goods-out processes

Outbound delivery planning
Picking
Packing and dispatch preparation
Dispatch staging and loading

Additional processes

Quality checks
Supplier returns
Customer returns
Cross-docking
Value-added services

Main functions

Warehouse model
Stock management
Article master data
Load unit management
Packing instructions for load carriers

Additional functions

Multi-client capability
Managing several warehouses
Performance tracking
Personnel allocation planning
Slotting
Stock reorganization
Route management and shipment tracking
Serial numbers, lot numbers and date marks
Empties management
Dangerous goods management
Customs management

Performance of logistical processes

Logistical functions

Material flow control
Order release
Order start
Weighing
Checking
Document insertion
Recording and controlling lots, date marks and serial numbers

Man-machine interaction

Control center
Work stations
RF mobile terminals
Voice-guided terminals

Machine control connections

KNAPP warehouse technology
Warehouse technology from third-party suppliers

Statistics and reports

Maintenance and system monitoring

Add-ons

KiSoft Pack Master – software for calculating the best possible stacking patterns

KiSoft Sandbox – test and emulation environment

KiSoft Track & Trace – shipment tracking between the warehouse and the end customer

Other sector-specific modules

Machine control

Storage systems

Work stations

Picking systems

Conveying and sorting systems

Handling and printing systems

Machine control with KiSoft SCADA visualization for:

Selecting the operation mode and operation parameters

Visualizing the operational state down to I/O level

Controlling and monitoring operation

Support with maintenance and troubleshooting

easyUse
operating concept

Uniform operating concept with a unique user experience

Intuitive man and machine communication

Consistent look and feel

Reduced to the essentials

User-orientated depiction on the perfect terminal for the task

Analytics

Big data solution for analyzing and optimizing the entire logistics system

Central collection of all logistical and mechatronic data

Big data becomes smart data – standardization of information

Flexible and individual analyses of complex systemic relationships

Data mining and predictive analytics for continual optimizations

flexible
as your business

Markets and business areas are changing rapidly

Digitalization is taking the world by storm. Markets are changing and new business models are emerging. Innovative software solutions for efficient management of logistics processes pave the way to a smart warehouse and provide the required agility and performance, today and in the future.

The KiSoft portfolio is based upon the know-how and experience gained from over 1,800 installations in diverse sectors. Flexibility and scalability are two of the essential attributes needed to juggle the array of demands. The focus is always on cost-effective systems and the KNAPP philosophy **making complexity simple**.

Healthcare

The extra mile in quality and efficiency: KNAPP supports the entire pharmaceutical supply chain, from production to direct-to-patient delivery and online mail-order pharmacies with its KiSoft product portfolio and core technologies like the KNAPP-Store and a range of further solutions.

Fashion

High-end logistics: Wide article ranges, several different collections per year and the rapid growth of online retail are characteristic of fashion logistics. KiSoft is the link between business processes and warehouse technology such as the OSR Shuttle™ storage system, overhead conveyor systems or Pick-it-Easy work stations.
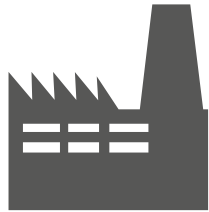
Industry

Smart production: Flexible response to different lot sizes and changes in production – KNAPP's automated shuttle system is connected directly to the production process and ensures that the assembly work stations are supplied at exactly the right time. Intelligent Vision technology checks every assembly step in real time. The integrated KNAPP software solution KiSoft optimizes and controls all processes.

Retail

Maximum performance: At KNAPP, innovative automation and software solutions come from a single source and fulfil all customer demands for efficiency, ergonomics and flexibility. Intelligent omni-channel solutions serve all distribution models and ensure maximum availability of goods in both stores and with the end customers.

Food Retail

Highly flexible: In highly automated distribution centers, e-commerce orders are processed using KNAPP's E-Grocer system solution. KiSoft efficiently controls and coordinates the flow of goods, optimizing and monitoring all of the processes. A complete overview and transparency are provided by visualizing all the warehouse components.

Standards
with room for customization – the perfect solution

Listen and visualize

The concepts of logistics processes and procedures are especially vague in the initial phase of a project. That's why we ask questions. We take the time to listen, find common ground and get to know the customer and their business, identifying what makes them so special. The goal is to interpret the requirements correctly, make them transparent and then create a tailor-made system solution that provides the customer with the ideal support for their business, while also leaving them with room for individuality and future growth.

We accompany our customers on the journey from the initial designs to the finished concept that forms the foundation of the real solution – and this has visible results.

Which **processes** must be integrated?

What is the **article range** like?

Which **targets** must be reached

Which **needs** must be fulfilled?

Are there **value-added services?**

Which **business models** should be catered to?

Which **requirements** must the warehouse be capable of fulfilling in the future?

?
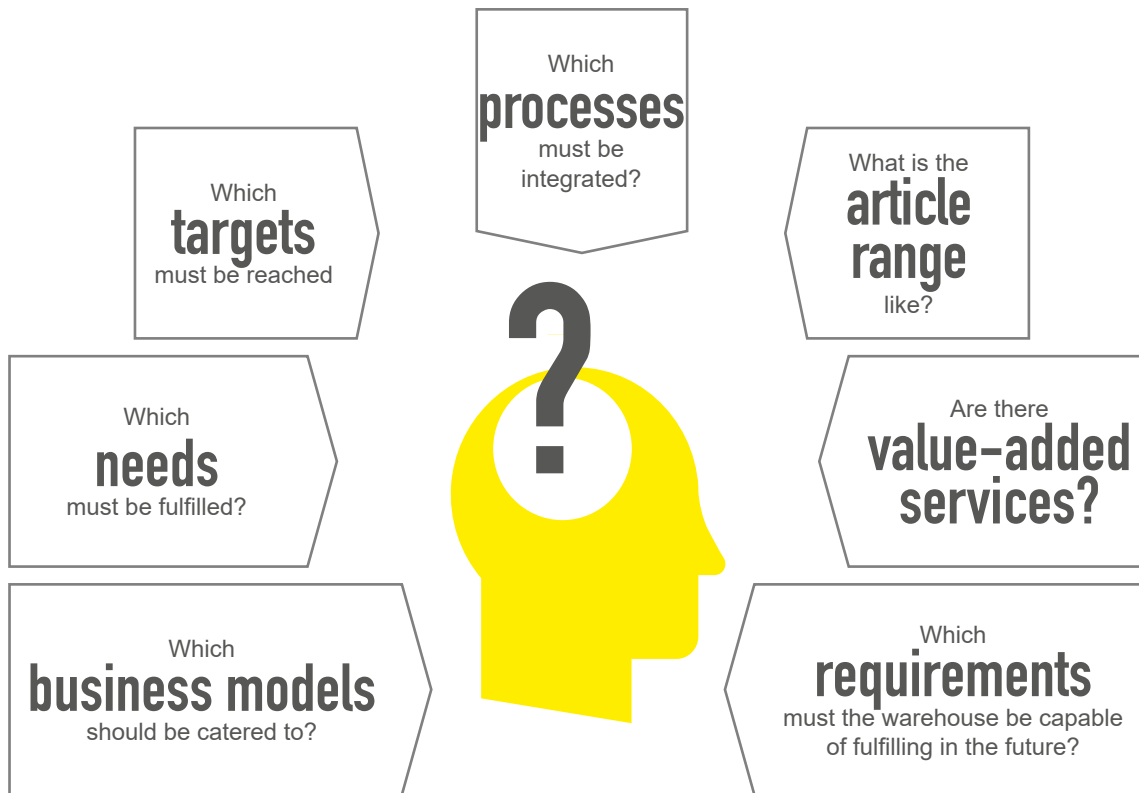
Our industry and software experts completely immerse themselves in the world of our customer and go more and more into detail as the project progresses. Bit by bit, a picture forms of a proposal for possible investment. It shows where the criteria for success lie and how our solution can be embedded in the customer's supply chain. With this as a basis, the necessary logistical processes and functions are developed and documented in a way that is easily comprehensible. The completion of this stage marks an important milestone in developing the customized system of the future.

Design and implementation: How can processes and functions within a complex warehouse be validated in terms of customer requirements? And before any components are even installed?

The KNAPP method for **analysing and modeling business processes** allows our experts to shape the essential framework for your individual solution and make the necessary software configuration transparent and easily grasped. This approach minimizes the risks and therefore the costs over the course of the entire project.

Virtual startup: We use simulation and emulation models to immerse ourselves in virtual software worlds, and build 2D or 3D models with a detailed representation of the system. The warehouse comes alive before installation work has even begun, revealing the system's capacity. This course of action considerably increases efficiency over the course of the project and that fits KNAPP's **zero defect philosophy**.

KiSoft WMS
Warehouse Management
at its best

Software is key.

High flexibility, performance and speed, economical and geared towards the future – a warehouse has to meet the widest possible requirements. Software is an essential factor in achieving success in the long term. We use the warehouse management software **KiSoft WMS** with our customers around the world. **Plan, control, monitor and optimize** – KiSoft manages and connects all processes from goods-in to goods-out and provides all of the necessary functions with their combined strengths in manual and highly-automated warehouses. KiSoft WMS allows solutions to be tailor-made. To do so, the design of the processes must be right. During the design phase, we form the best solution, tailored to your requirements and expectations, and then define the requirements for the processes and functions in the warehouse.

quality

condition

higher speed

location

more flexibility
for costumers

less cost

High level of standardization

Selecting the right software suppler is a decisive, determining factor. The comprehensive KiSoft portfolio has proven itself in thousands of applications; it combines experience with innovation and brings maximum performance, availability and state-of-the-art communication to warehouse logistics. Such evolutionary software solutions mean that KNAPP has entered a new dimension in logistics. KNAPP continues to develop its software portfolio calling on its years of experience, industry know-how and expertise.
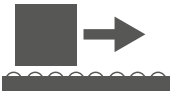
Modular system architecture

Its clearly sub-divided, modular system architecture guarantees the highest degree of flexibility and scalability. On average, the wide scope of functions of KiSoft's standard package covers 90 percent of requirements. Generic concepts provide our customers with plenty of room for customization. A software solution tailored to individual requirements makes up a relatively small proportion of the investment volume of a logistics system, but makes a disproportionately large contribution to business success, often decisively differentiating customers from the competition.

KNAPP has combined swift and efficient implementation with simple integration in diverse Host systems with the all-in-one KiSoft software solution. Individual lifecycle support ensures maximum investment security.

Software solutions for controlling machines allow the following:

Checking and monitoring of the entire warehouse operation	Visualizing the operational state down to I/O level
Testing individual functions	Support with maintenance and troubleshooting

Conveying and sorting systems
Streamline | Powerline
Overhead conveyor system | OSR Shuttle™
Sorter | Pocket sorter system
Open Shuttles

Automatic picking systems
Central Belt System | Pick-it-Easy Robot
KNAPP Medication Dispenser

Storage systems
OSR Shuttle™ | KNAPP-Store
Industore | Fastbox

Handling systems for
Containers | cartons | trays | pallets
paper | measurement and checks
packing and transport

Guided Applications: Manual systems
Voice | RF | Pick-to-Light
Vision manual picking

Work stations
Pick-it-Easy Shop | Pick-it-Easy Multi
Pick-it-Easy Health | Pick-it-Easy Tray
Pick-it-Easy Move | Pick-it-Easy View

Selection of operating parameters and operation mode

Manual control of individual components

KiSoft WCS and machine control

Complete transparency

maximum availability

Control, monitor, coordinate and optimize flows of goods

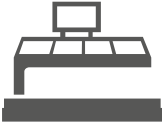The **warehouse control system KiSoft WCS** controls, monitors and coordinates **in real time** the execution of all processes within the automated warehouse areas down to machine level. KiSoft WCS optimizes the use of resources taking the performance of personnel and the machines into consideration, prevents bottlenecks and guarantees the requires delivery quality.

KiSoft WCS integrates subsystems such as the OSR Shuttle™ storage system, the Pick-it-Easy Robot or the freely navigating Open Shuttles as well as interfaces to the machine control systems and transfers individual tasks for processing. Even manual picking processes such as RF or Voice technology, as well as head-mounted displays can be integrated in KiSoft WCS. Another important advantage is that the WCS also comes as a retrofit solution for the modernization of logistics solutions and is often integrated in the warehouse technology of third-party suppliers.

Innovative and intuitive
operating concept

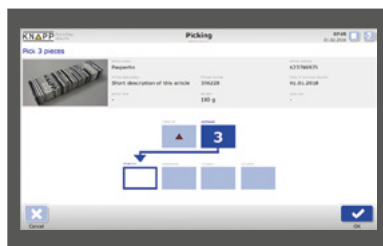User-orientated
presentation of
information and
data

Graphical user
interface

Modern man-machine
communication

Flexible dashboards
for mobile terminals

easyUse

easyUse stands for
intuitive operation, high
performance, user-
orientated display of
information and a short
training period for new
personnel.

Maximum flexibility using apps for
smartphone and tablet. The easy-
Use operating concept provides
the greatest possible overview,
control and transparency for
managing the entire system – at
any time and in any place.
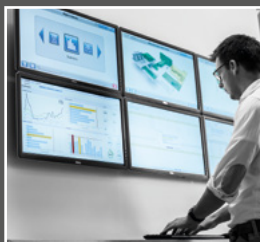
Used with KiSoft, the innovative
operating concept easyUse
provides the warehouse manager
with all important information and
data required for efficient logistics
in a clear-cut format.

A touchscreen decked in the
easyUse design guides the
warehouse worker intuitively
through the work processes in the
warehouse. Its user-orientated
depiction of the work processes
guarantees an ergonomic,
efficient way of working that
accomplishes both high quality
and performance.

Reduced to the essentials: The
easyUse user interface is easy to
operate and depicts data not only
in a compact form, but in a way
that is adapted to the terminal in
use, ensuring high performance
and quality

Ever increasing digitalization represents both an opportunity and a challenge. Tremendous amounts of data need to be processed and made available to the user at exactly the right time and in the best possible form to assist them with their work. With easyUse, KNAPP is bringing the **latest in man-machine communication** with a unique **user experience** to all levels of the software hierarchy in warehouse logistics – from the WMS to machine control.

easyUse
modern
man and machine communication

easyUse is making complexity simple

The easyUse design is impressive in its consistent look and feel and in its ability to reduce information to the essentials within an **intuitive operating concept**. The user interfaces are clearly structured. The use of icons and colors facilitates intuitive interaction and fast navigation through the individual work steps.

Whether service technician, warehouse manager, warehouse worker of a member of top management, information is displayed for the user in a way that is right for them and adapted to the terminal in use, facilitating an efficient and accurate way of working.

Visualization with KiSoft SCADA

The **enduring availability** and **productiveness of a system** is one of the most important requirements for economical warehouse operation. KiSoft SCADA **provides a complete overview of the technical state of the entire warehouse**, displays all system components such as the Streamline conveyor system, and indicates their **operational state**, thereby achieving **complete transparency**. KiSoft assists in providing punctual, preventative maintenance and efficient deployment of service technicians, in **acquiring production data** and in facilitating **swift incident resolution**. KiSoft SCADA can be used flexibly on the multi-screen KiSoft i-Point or on mobile terminals such as tablets or smart phones.

Furthermore, KiSoft SCADA is the ideal addition to the KNAPP group's service solutions. It forms a particularly strong portfolio of solutions together with wearable services and Service 4.0™.

KiSoft SCADA, combined with the easyUse operating concepts, provides the service technician with a clear overview of the technical state of the entire system and thereby guarantees the availability, productivity and stability of the logistics system

KiSoft
analytics

Smart logistics

logistics of information

Glean information from data to generate knowledge – this is the objective of big data management. Even in the digital age of the Internet of things, humans are the most important factor in the success of a company. The ability to make the right decisions based on the ever-increasing abundance of data today requires intelligent systems and tools. They form the basis of concrete measures and point to alternative solutions.

> **Flexibility and the ability to quickly adjust are key to modern logistics. A special cloud software solution helps redPILOT to operate logistics systems around the clock and at their very best — ecologically, socially and economically**
>
> Siegfried Zwing,
> Managing Director of redPILOT

From big data to smart data

KiSoft Analytics offers you a tool for the continual optimization of your logistics system. KiSoft collects data from all the different systems – whether that be systems belonging to the customer, systems from third-party providers or systems spanning several warehouse sites. Intelligent tools and a big data platform take an enormous and unstructured volume of data and generate **intelligent data tailored to individual requirements** that can be used to make the right decisions, which establishes sufficient transparency and allows for optimization measures to be taken. This leads to data mining, which aims to draw conclusions and identify correlations from intrinsic information. Logistical and mechatronic data can be called up from the smallest detail to aggregated data, on any terminal and at any time. An important advantage: KiSoft Analytics also allows **multi-warehouse and comparable analyses and optimization** to be undertaken.

Optimization — today, tomorrow and in the future

Based on **condition monitoring**, a logistics system can decide independently **when it requires servicing** and which services it requires – taking use and workload into account. In the future, the performance and availability of a system will be optimized throughout its entire life cycle through **proactive action and machine learning**.

Tools for comprehensive optimization of operation provided by redPILOT, a member of the KNAPP group, also provide the right answer to various system optimization questions. These tools now make it possible to optimize the entire operation of the warehouse for the pursuit of the right goals. The workload involved is taken into account, including quality requirements, capacities of both man and machine, required space, as well as environmental factors such as energy consumption and optimized so that they are as cost-efficient as possible.

> With SAP® EWM by KNAPP, we offer our customers the best logistics solutions fully integrated on an SAP IT platform. These solutions are based around our philosophy making complexity simple, our many years of experience in warehouse automation and the successful approach to project management we have developed.
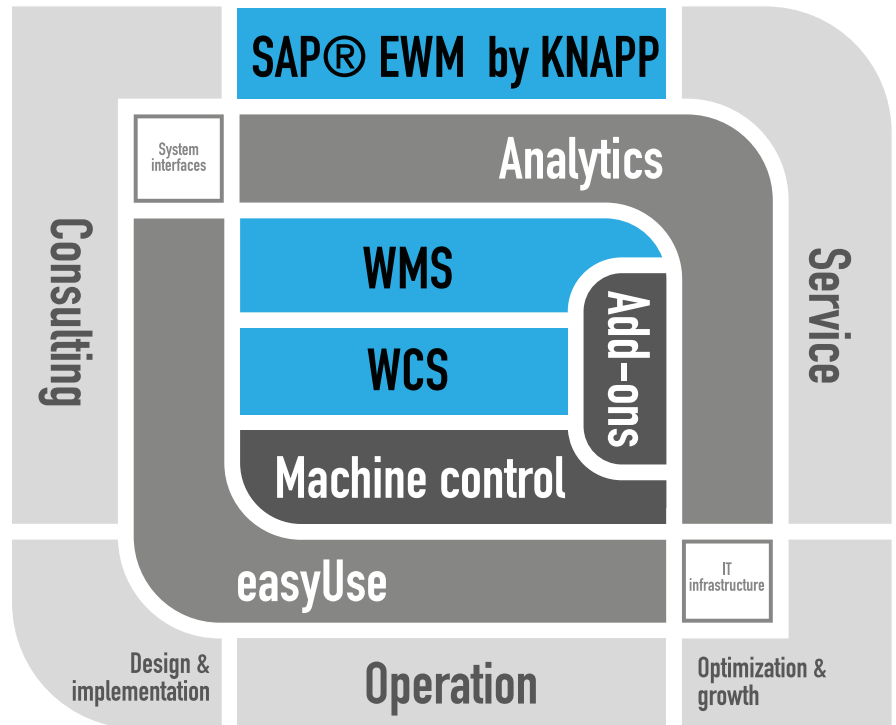
Gerald Lassau,
Managing Director
of KNAPP IT Solutions GmbH

SAP® EWM
by KNAPP

Solutions for all levels of automation

SAP EWM (Extended Warehouse Management) is a comprehensive, end-to-end solution that facilitates integrated planning along the entire supply chain. With SAP EWM by KNAPP, we not only offer you transparent processes, but also the possibility to undertake modifications and programming yourself. SAP EWM by KNAPP is the right solution for anyone wanting to implement an SAP IT strategy and looking for an outstanding logistics solution based on the **expertise of the KNAPP group**.

Diagram labels: SAP® EWM by KNAPP, System interfaces, Analytics, Consulting, WMS, WCS, Add-ons, Machine control, Service, easyUse, IT infrastructure, Design & implementation, Operation, Optimization & growth

High standard with room for individuality

With SAP EWM by KNAPP, real-time control and system visualization (KiSoft SCADA), we offer our customers the best of both software worlds, as well as experience and cumulative expertise from over 1,800 installations worldwide. Over 80 percent of the warehouse processes are identical within the same sector; that's why SAP EWM by KNAPP is already pre-configured for best practice solutions. The focus of a project is developing and implementing processes that are specific to the customer. A basic installation of SAP EWM by KNAPP is ready quickly, with crucial core processes such as goods-in, storage, replenishment, picking and dispatch ready to go. Our customers benefit from our know-how in warehouse management and the possibilities that SAP EWM offers. Involving the customer early on with the help of the business release as well as key user tests, assisted by emulation and simulation of the system has proven to be incredibly successful.

Best in class

SAP EWM by KNAPP is the solution for all levels of automation. SAP EWM by KNAPP can be connected directly to the control system thanks to the integrated MFS (Material Flow System). What's more, we offer compatible drivers that provide a real-time control system. This enables the SAP EWM MFS to control the Streamline and Powerline conveyor systems, for example, or high-performance storage and picking systems such as the OSR Shuttle™, the Central Belt System or the innovative Vision technology. Even the usability of the user interfaces in SAP EWM by KNAPP has been made even friendlier in accordance with our easyUse concept.

Transparent supply chain execution

SAP EWM by KNAPP is the solution for transparent and efficient supply chain execution and is already included in the new SAP ERP (S/4HANA). The integration of the transport management tool SAP TM and the event management tool SAP EM optimizes processes beyond the warehouse, such as inbound and outbound flows of goods, carrier and freight cost management, track and trace, and more.

Smart services

long–term strategic partnership

The plus factor in service

Flexible, adaptable, supportable

KNAPP provides comprehensive and innovative services that flexibly adapt to business developments, as well as guarantee availability and stability, sustainable success and investment security. Our primary aim is to achieve maximum customer satisfaction and not only offer a service. We want our services to impress! **Business operation partnership**: As part of our **zero defect warehouse** philosophy, our service experts stand side by side with our customers 24/7, from delivering the system to operation across the entire life cycle of the system, providing them with customized service solutions that form part of our **System Support 360°+** portfolio.

You can view the technical state of your system, current and historical data any time and place via the **Service Portal and e-insight app**. This ensures that you always remain in the know when it comes to the lifecycle of your system.

Service 4.0™

Smart warehouse logistics requires completely new approaches to service, as well as tools and solutions. The **Service 4.0™** strategy ensures that every customer receives their own optimal service package. All important information and data is made available in real time through **data capture, analysis and visualization from ongoing system operation** with KiSoft SCADA and KiSoft Analytics, in order to evaluate the performance and the condition of the system or proactively identify measures and areas of optimization.

The mission: Combined with self-learning software programes, the available services can be correctly selected, interconnected and used efficiently. Every warehouse decides for itself which services it needs: when to perform service, at which location and the scope of service required. All services are available, without restrictions, to every customer at all times. Centrally intelligent software links the services of the future with each other and coordinates all processes.

The
future
is now

When others only start to think about something, we're already doing it:

Warehouse operation support:
We provide your management with a complete system and performance overview for optimized warehouse operation that can also be accessed on mobile devices.

Managed services:
Errors and altered framework conditions for predictive services can be derived automatically from data patterns, to organize spare parts orders, for example, or prepare campaigns for the retail sector.

Transport index:
Our transport index offers our customers a complete overview of the entire system — a unique added value in the sector.

Service relation management:
We put personnel first and provide your employees with training on how to use new technologies.

Customer satisfaction through the KNAPP Promoter Score:
We regularly evaluate the satisfaction of our customers using the international evaluation tool.

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