SAP Transportation Management

Simplify and Optimize Transportation Management
Streamline Operations and Reduce Cost

SAP **Run Simple**

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# Deploying a Holistic Solution for Connected Transportation

To address the increasing complexity and volatility of global logistics, shippers and logistics service providers must optimize logistics processes and improve service while increasing visibility and control. The SAP® Transportation Management application streamlines end-to-end processes for goods movement across all transportation modes, helping you improve operational efficiency and reduce costs.

REDUCING TRANSPORTATION COMPLEXITY

Meeting customer expectations for rapid, accurate delivery of goods is a growing challenge for logistics professionals. Thanks to the surge in e-commerce and omnichannel models, products move across multiple tiers of a global supply chain. Sharing information effectively across the logistics network requires the ability to communicate with large numbers of supply chain partners, who use a wide variety of desktop and mobile communication devices. With the growth of real-time logistics and transformative technologies, logistics service providers that value efficiency also must be able to collect, analyze, and utilize Big Data from billions of sensors, telematics, and other advanced devices connected to the Internet of Things (IoT).
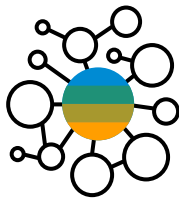
Logistics service providers must be able to collect, analyze, and **utilize Big Data** from billions of sensors, telematics, and other advanced devices connected to the Internet of Things.

While handling more data and greater complexity, transportation managers are expected to reduce spending as a percentage of cost and maximize the return on each asset. To enhance service levels, companies need better logistics visibility so they can offer reliable, on-time delivery. They also must improve corporate sustainability and regulatory compliance. Meeting these needs requires a holistic business solution that offers efficient connectivity to business partners and external systems, enabling streamlined communications across the value chain. You also need a solution that optimizes your end-to-end transportation management process (see Figure 1) and helps you meet your supply chain execution mission.

SAP Transportation Management helps you improve customer service and enhance delivery capabilities while reducing costs. You can accurately forecast transportation demand, negotiate freight contracts, receive and consolidate orders, monitor and track your shipments, and maximize the return on your transportation spend. Centralized, standardized transportation operations help you streamline the freight-costing process.

Companies need a holistic business solution that offers smooth connectivity to business partners and external systems, enabling **streamlined communications** across the value chain.
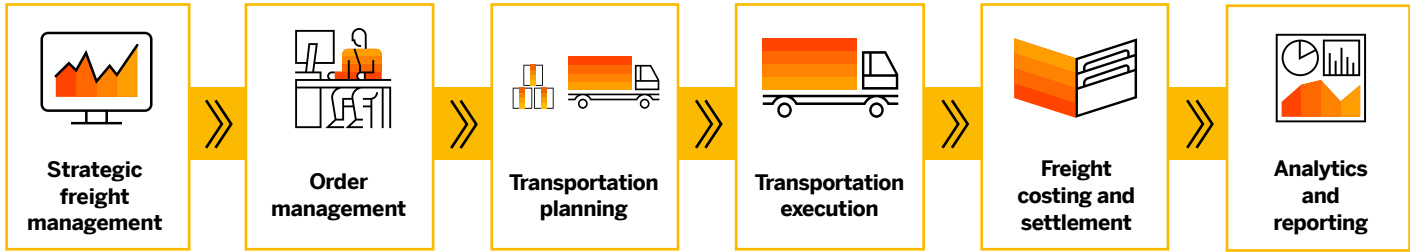
| Strategic freight management | Order management | Transportation planning | Transportation execution | Freight costing and settlement | Analytics and reporting |

Figure 1. End-to-End Transportation Management Process

Real-time analytics offer instant insight into key strategic and operational performance parameters to help you focus on improvement areas with reduced data complexity. With real-time operational insights from a variety of data sources, you can tightly monitor and limit the number of expedited shipments.

The solution offers role-based functionality, modular implementation, and deep, native integration with SAP Business Suite applications. It supports large and mid-market companies by simplifying key processes and streamlining complex, high-volume operations.

You can **accurately forecast** transportation demand, negotiate freight contracts, receive and consolidate orders, monitor and track shipments, and maximize the return on your transportation spend.

Both shippers and freight-forwarding companies can use the solution to handle domestic and international transportation. It can help organizations optimize and consolidate freight spend across both inbound and outbound freight movements.

SAP Transportation Management is part of our comprehensive supply chain execution platform that includes the SAP Extended Warehouse Management application and the track and trace package from SAP, along with the SAP Connected Logistics package. This platform empowers you to operate, monitor, and improve end-to-end logistics processes across the value chain. Although some vendors integrate disparate solutions, SAP developed this platform to help you bring together all aspects of material flow in an end-to-end execution. With this platform, you can orchestrate warehousing and logistics, accelerate order fulfillment cycles, and reduce the total cost of your logistics operations.

WHY SAP

SAP has **45 years of experience** creating and implementing enterprise software. Today, we have **355,000 clients** in over **180 countries** and employ more than **87,000 people** across the globe.

SAP is a rapidly growing provider of transportation management solutions. The SAP® Transportation Management application is used by more than **400 customers** in **45 countries** and in **23 industries**.

SAP Transportation Management delivers business benefits that include deep visibility into logistics processes and faster, more efficient transportation, enabled by smarter decision making and real-time insights. Your IT group enjoys robust functionality for flexible, scalable system and process configuration. The application integrates with a unique enterprise-wide ecosystem of SAP software. The SAP Digital Business Services organization and a variety of excellent partner companies can lead you smoothly through implementation – and onward through continuing innovation and reinvention.

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**Streamlining Transportation
Management Operations**

Calculating the Benefits of SAP
Transportation Management

Streamlining Transportation Management Operations

Running your logistics operations at peak performance requires the ability to **efficiently plan, orchestrate, execute, and track shipments**. To improve productivity and boost asset utilization, you need to automate processes, support electronic collaboration, and reduce redundancies. SAP Transportation Management offers the features and functionality that can help you meet these objectives.

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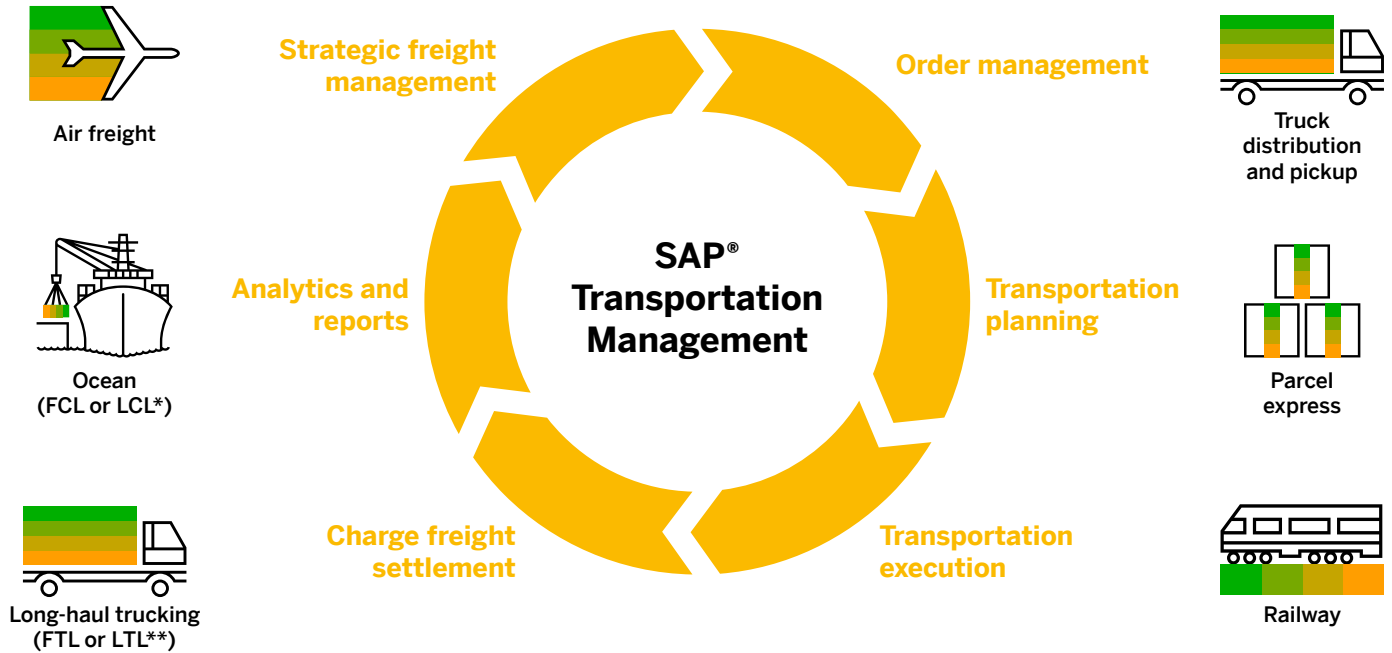Calculating the Benefits of SAP
Transportation Management

STRATEGIC FREIGHT MANAGEMENT AND CAPACITY PROCUREMENT

Whether you are buying or selling freight services, you need a solution that optimizes capacity for all transportation modes for both common and remote shipping lanes. That's why SAP Transportation Management offers strategic freight management features that help you forecast freight needs, collaboratively manage the process of buying and selling freight capacity, and efficiently create freight agreements.

The software supports the entire freight capacity management process for all transportation modes using one integrated solution (see **Figure 2**). You can enable flexible and efficient freight capacity procurement through freight contract negotiations and automated electronic capacity reservations that include shipping instructions. Simple modeling of complex scenarios and powerful what-if simulations help you choose the strategies most likely to enhance profitability, cost efficiency, and customer satisfaction. Real-time reporting helps you measure compliance against carrier and customer agreements and identify opportunities for cost savings.
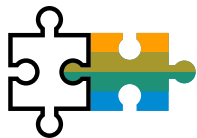
SAP Transportation Management supports the entire freight capacity management process for all transportation modes using **one integrated solution**.

Air freight

Ocean (FCL or LCL*)

Long-haul trucking (FTL or LTL)**

Strategic freight management

Analytics and reports

Charge freight settlement

SAP® Transportation Management

Order management

Transportation planning

Transportation execution

Truck distribution and pickup

Parcel express

Railway

Figure 2. Support for Multimodal Transportation

*Full container load or less than container load

**Full truckload or less than truckload

The solution offers the following functionality:
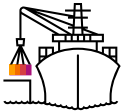
Strategic freight procurement, including advanced analysis, forecasting, and simulation features that help you develop optimal freight agreements with carriers

Strategic freight selling, enabling a closed-loop, streamlined quote-to-contract process and automatic determination of the best rates for various services in response to customer requests

Predictive, insight-driven prebid evaluation and bid preparation using industry templates and a one-click contract creation feature to optimize the evaluation and response process – even through multiple quotation rounds

Ocean and air schedule and capacity management, with advanced business-to-business (B2B) connectivity features that let you send booking requests to the carrier, receive confirmations, cancel bookings, and add execution messages to the carrier through electronic air waybill or shipping instructions
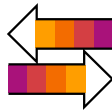
Collaboration feature that helps you efficiently communicate and exchange information with carriers and other logistics service providers and receive alerts when preestablished transit time or cost thresholds are exceeded

Integration with industry logistics networks for interenterprise electronic data and document exchange, which helps enhance transportation management connectivity, collaboration, and regulatory compliance

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ORDER MANAGEMENT

Accurately receiving orders and efficiently processing them are critical capabilities in the logistics business. SAP Transportation Management helps you receive order-based or delivery-based transportation require-ments manually or electronically from multiple order management systems. You can confirm, plan, and execute orders; coordinate delivery with the warehouse; and communicate order status with business partners.

The software offers the following order management features:
- Creation of dynamically generated, optimized routing proposals for orders based on business rules to avoid extra freight cost and deliver better customer service
- Holistic integration and management of all transpor-tation demand with order-to-cash and procure-to-pay processes, with change management in real time based on business rules to help ensure a closed-loop communication cycle
- Customer delivery commitments enabled through synchronized sales order scheduling

The software helps you receive order-based or delivery-based transportation requirements manually or electronically from **multiple order management systems**.

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• Integration with order and delivery data in the SAP ERP application, including full cross-system order access and visibility into the status of each order

TRANSPORTATION PLANNING
Achieving on-time, low-cost freight delivery requires sophisticated transportation planning. SAP Transportation Management helps you optimize your transportation

plan down to the level of individual shipments and containers – improving resource utilization and reducing transportation costs (see **Figure 3**). You can consolidate domestic or international shipments, as well as shipments that use single or multimodal transportation. The software helps you achieve the right level of centralized or decentralized planning so you can identify synergies and meet your delivery goals.

Manual, map-based, or automated planning and dynamic replanning functions consider constraints, utilize real-time location information, and offer **insights to optimize freight planning** and tendering.

Figure 3. Load Planning

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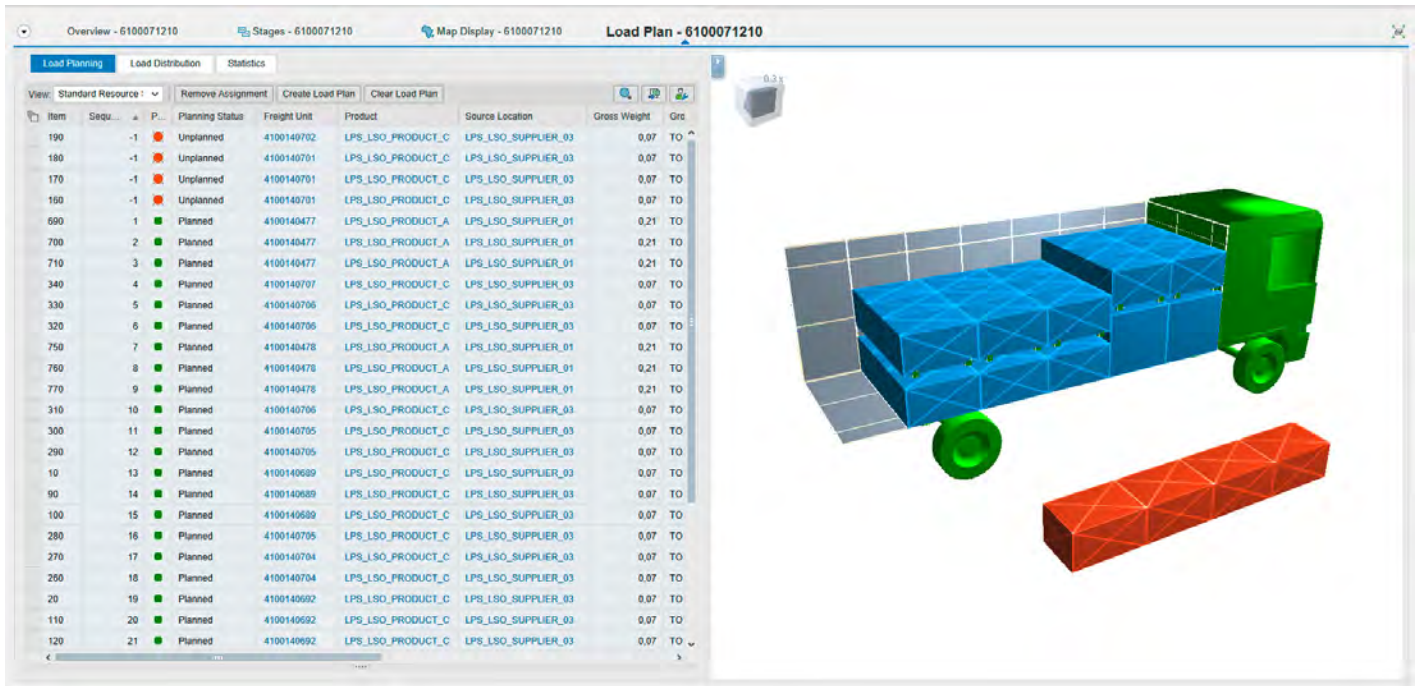
You can use the following planning features:

Manual, map-based, or auto-mated planning and dynamic replanning functions that consider constraints, utilize real-time location information, and offer insights from huge volumes of data to optimize freight planning and tendering

Improved pallet building, using flexible rules-based optimization of products and mixed packages while considering constraints such as package attributes, product stacking rules, height require-ments, and customer-specific requirements
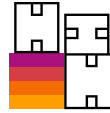
Visual load planning, helping you visualize vehicle space and optimized loading based on vehicle attributes (such as dimensions and weights), axle weight constraints, stacking rules, and delivery stop sequences

Driver management, helping you track and interactively manage driver resources while assigning drivers to specific freight loads using default assignments in a planning cockpit or a Gantt chart view
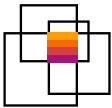
Determination of the most efficient combination of modes, routes, resources, and optimal carrier selection by factoring in costs and penalties
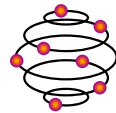
Freight tendering, which sup-ports multivariant tendering and enables communication through B2B, Web-based user interfaces, collaboration portals, e-mail, and SMS channels
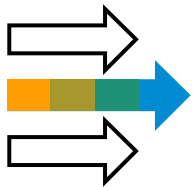
Consideration for dangerous goods attributes in freight planning and management

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TRANSPORTATION EXECUTION

A critical need for efficient and effective transportation is
the ability to execute a plan and adapt it to real-life events
in a dynamic environment. Well-coordinated planning and
execution can help you cost-effectively deliver goods
when and where customers expect them, while handling
delays and disruptions.

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With SAP Transportation Management, you can take advantage of:

Direct real-time integration with SAP Extended Warehouse Management, which automatically notes changes in freight documents until the freight has been received or loaded, and shares truck arrival and departure information between the two applications

Freight execution and capacity monitoring, management, and tracking, with real-time event management features such as map-based geographical tracking, alerts and notifications, and a reporting dashboard

Flexible communication among business partners using B2B messaging, collaboration portals, mobile apps, Web interfaces, file upload and download, print documents, e-mail, facsimile, and SMS messages

Comprehensive templates for road, sea, and air to print documents as well as settle freight

Integration with the SAP Global Trade Services application, which includes trade regulation compliance features for handling export declaration, import declaration, and transit and security filing

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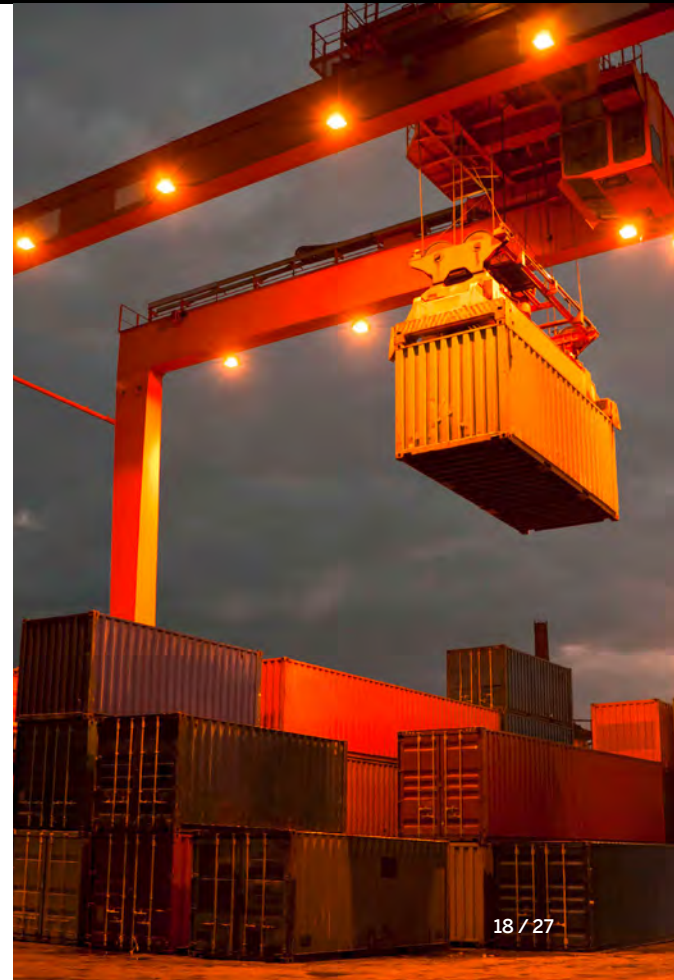Transportation Management

FREIGHT SETTLEMENT

Accurately managing transportation charges and
cost settlement with carriers and customers helps you
optimize freight costs. SAP Transportation Management
offers comprehensive freight cost management func-
tionality for costing, auditing, settlement, and reporting.

SAP Transportation Management
offers **comprehensive freight
cost management functionality**
for costing, auditing, settlement,
and reporting.

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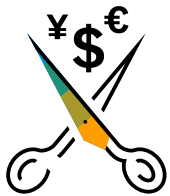
Key features include:

Advanced freight charge calculation and mode-specific charge and tariff management for road, rail, ocean, and air
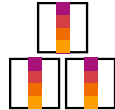
Accurate freight cost allocation across orders and materials for material valuation and order profitability analysis

Freight settlement features for accruals posting, carrier self-invoicing, invoice verification and payment, and credit memo processing
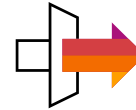
Invoice dispute management using the collaboration portal (see **Figure 4**), supported by tolerance settings and workflows

Integration with SAP ERP for freight settlement and invoicing, with general ledger posting, material valuation, and order profitability analysis

Freight cost reporting using an interactive freight cost dashboard

Group company logistics, enabling centralized logistics operations with consolidated, standardized logistics costing, even across decentralized companies

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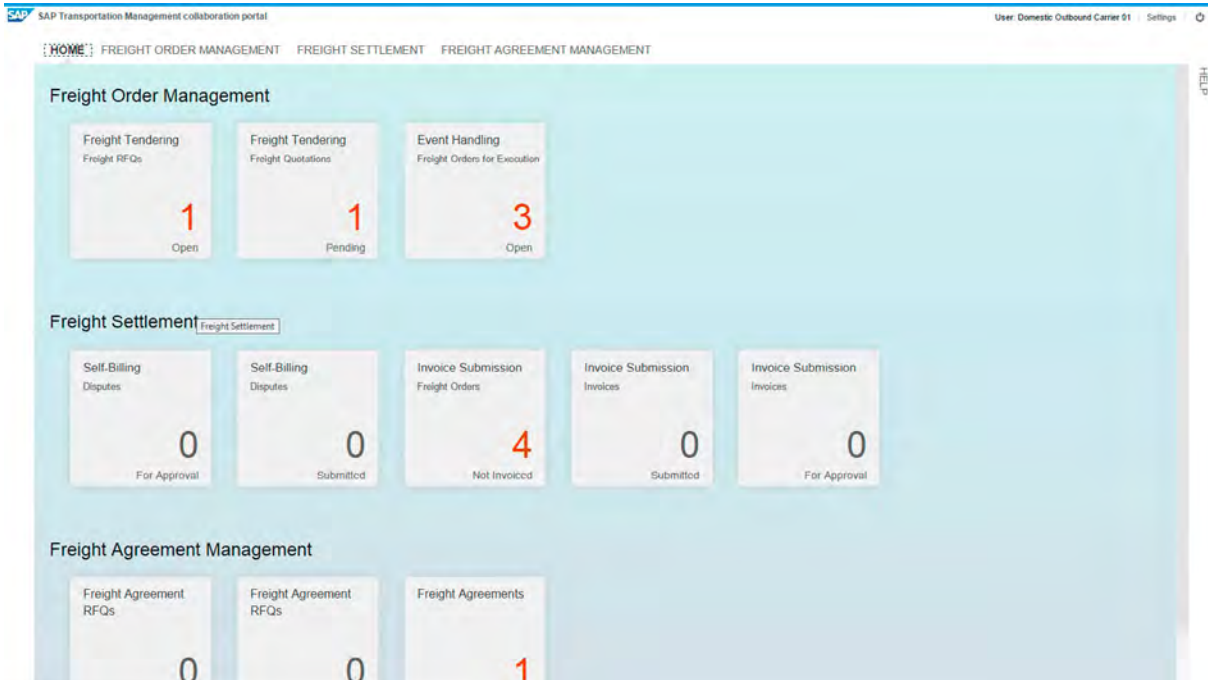
Figure 4. Collaboration Portal

ANALYTICS AND REPORTING

Managing transportation operations effectively requires instant access to data as we enter the era of data-driven logistics. SAP Transportation Management includes several comprehensive, flexible decision support tools that help you stay informed and make faster, smarter business decisions. You can display key performance indicators and slice and dice data with user-friendly tools such as SAP Smart Business cockpits, SAP Lumira® software for

data visualization, SAP Analysis software, SAP Virtual Studio tools, and SAP HANA® Live offerings.

The analytics and reporting tools in SAP Transportation Management include:
- Graphical dashboards that use the SAP HANA platform to support real-time, data-driven decision-making
- Flexible reports (including ad hoc reports and queries) across all areas of transportation, which can be easily consumed and help reduce data complexity

Display key performance indicators and slice and dice data with user-friendly tools such as SAP Smart Business cockpits and SAP Lumira software for **data visualization**.

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INNOVATIVE TECHNOLOGIES
SAP software incorporates the latest technologies to help you streamline and integrate transportation management processes. Our digital supply chain solutions use SAP Leonardo, a new digital innovation system that integrates breakthrough technologies and runs them in the cloud. SAP Leonardo includes a core set of capabilities focused on IoT, machine learning, analytics, Big Data, and blockchain technology.

SAP Transportation Management uses the power of SAP Leonardo and its IoT capabilities to enable rapid innovation and digital transformation, helping customers reimagine their businesses. By using SAP Leonardo innovations with our transportation management software, we can help you support real-time, connected transportation processes and handle large volumes of transportation and logistics data for state-of-the-art analysis and planning.

Our digital supply chain solutions use SAP Leonardo, a new **digital innovation** system that integrates breakthrough technologies and runs them in the cloud.

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SAP TRANSPORTATION MANAGEMENT
IN SAP S∕4HANA®

Today, SAP Transportation Management is available as an embedded solution in SAP S∕4HANA®, our next-generation enterprise business suite. Now, all transportation and logistics processes can come together in one centrally deployed system. This reduces data redundancy, effort, and cost – while empowering your business to run more simply.

FLEXIBLE DEPLOYMENT

Choose the deployment model that best meets the needs of your business. Install SAP Transportation Management as a decentralized on-premise application, deploy it as an embedded solution in SAP S∕4HANA, or access it as a cloud service.

You have two choices for connecting SAP Transportation Management to the power of SAP S∕4HANA. You can integrate a decentralized instance of SAP Transportation Management with the SAP S∕4HANA Enterprise Management solution (**Figure 5**), or you can rely on the transportation management functionality that's embedded directly in the instance of SAP S∕4HANA Enterprise Management (**Figure 6**).

We also offer information resources and services that can help you ensure a successful implementation and maximize your ROI over the lifetime of the solution.

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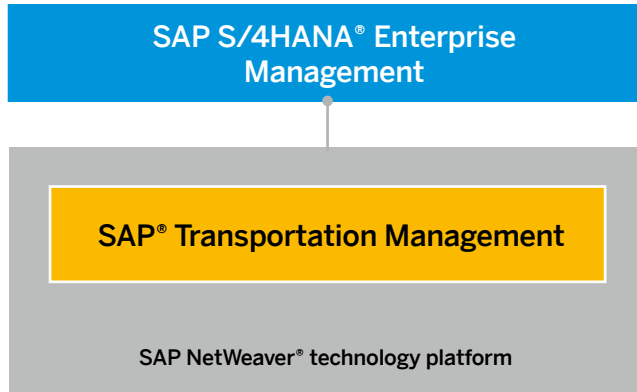
Figure 5: Decentralized Transportation Management
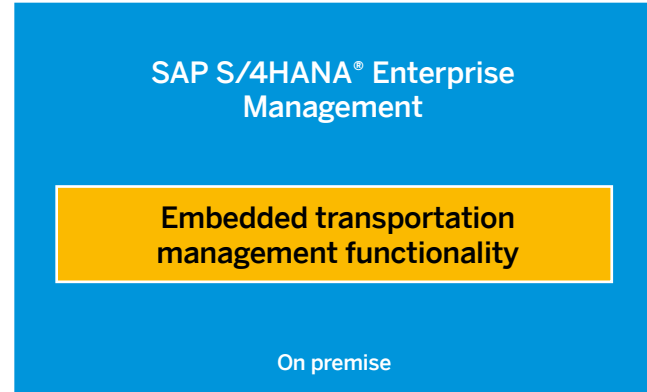
Figure 6: Embedded Transportation Management

Choose the deployment model that best meets the needs of your business. Install SAP Transportation Management as a decentralized on-premise application, deploy it as an embedded solution in SAP S/4HANA, or access it as a cloud service.

Calculating the Benefits of SAP Transportation Management

SAP Transportation Management helps you **create efficient and responsive transportation operations and standardized processes** that allow you to increase asset utilization, reduce transportation cost, and improve customer satisfaction. The software helps you accurately forecast demand and shipment volumes, consolidate and plan orders, and maximize return on spend by fine-tuning your transportation planning, execution, freight cost settlement, and data analysis processes.

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**Calculating the Benefits of SAP
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Automated processes, electronic collaboration, and reduced redundancies increase business efficiency and productivity. Enhanced visibility throughout the value chain helps increase service responsiveness. Many companies have realized significant freight spend savings through consolidation, negotiation, higher asset utilization, and reduction in expedited shipments and

overhead. In addition, more accurate costing and settlement can improve cash flow and reduce your freight-costing workload. Detailed reports, real-time analytics, and drill-down functionality provide instant insights that support faster freight cost analysis and improved business decisions.

Companies can realize **significant freight spend savings** through consolidation, optimal carrier selection, negotiation, higher asset utilization, and reduction in expedited shipments and overhead.

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According to SAP performance benchmarking, companies using our transportation management software typically realize the following benefits:

7.7%
Lower freight spend

16%
Decrease in outbound expediting costs

77%
Shorter average trailer turn

13%
Fewer invoice errors

Together, these improvements can help you improve service effectiveness and on-time delivery rates, enhancing customer satisfaction and loyalty.

LEARN MORE
To find out how SAP Transportation Management can help your company improve its logistics operations, visit our **Web site**, use the **SAP Solution Explorer** tool to review our offerings, or watch this **video**.

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