SAP Transportation Management

Overview

Elinor Castell, SAP SE
March 22, 2017
# SAP S/4HANA Overview (1610)

## SAP S/4HANA Suite

### SAP S/4HANA Finance
- **Concur**
  - Integrated business planning

### SAP S/4HANA Human Resources
- SAP SuccessFactors
  - Core human resources and payroll
  - Talent management
  - Time and attendance management
  - Human capital analytics
- SAP Fieldglass
  - Supplier Collaboration
  - Business Network

### SAP S/4HANA Sourcing & Procurement
- SAP Ariba
  - Supplier information and master data
  - Operational procurement
  - Invoice and payables management
  - Operational sourcing and contract management
- SAP Fieldglass
  - Supplier Collaboration
  - Business Network

### SAP S/4HANA Manufacturing
- Manufacturing integration and intelligence
- Manufacturing Execution System
- Quality Issue Management
- Visual Enterprise

### SAP S/4HANA Supply Chain
- Manufacturing Planning
- Integrated Business Planning
- Customer & Supplier Collaboration
- Extended Warehouse Management
- Transportation Management
- Advanced Planning & Optimization

### SAP S/4HANA Supply Chain
- Manufacturing Planning
- Integrated Business Planning
- Customer & Supplier Collaboration
- Extended Warehouse Management
- Transportation Management
- Advanced Planning & Optimization

## Products

### Enterprise Management
- **Digital Core**
  - Accounting and financial close
  - Treasury and financial risk management
  - Receivables management

### Products
- **Order and contract management**
  - Service management
  - Service master data management
  - Service parts management
  - Service agreement management

### SAP Products
- **SAP S/4HANA Sales**
  - SAP Hybris
    - Cloud for Sales

### SAP Products
- **SAP S/4HANA Service**
  - SAP Hybris
    - Cloud for Service

### SAP Products
- **SAP S/4HANA Marketing and Commerce**
  - SAP Hybris
    - Cloud for Marketing

### SAP Products
- **SAP S/4HANA Asset Management**
  - Multi-Resource Scheduling
  - Management of change
  - Predictive Maintenance and Service
  - Asset Intelligence Network
  - Mobile Asset Management

### SAP Products
- **SAP S/4HANA Research and Development**
  - Engineering Collaboration
  - Authoring Tool Integration
  - Visual Interaction Services

## Industries

- **SAP S/4HANA**
  - Cloud for Service
  - Cloud for Marketing
  - Cloud for Sales
  - Cloud for Supply Chain
  - Cloud for Enterprise Management

© 2017 SAP SE or an SAP affiliate company. All rights reserved. | EXTERNAL
SAP Supply Chain Execution Mission and Strategy

High customer value with a complete, best-in-class, multi-industry offering

Business Opportunities

Reduce Spend
- T&L cost reduction
- Asset & labor optimization
- Lower TCO
- Freight cost negotiation

Improve Service
- Improve logistics visibility
- On-time delivery
- Seamless integration and connectivity

Improve Sustainability & Regulatory Compliance
- Transportation optimization
- Green logistics

Transformations

- Order Management
- Transportation Planning
- Transportation Execution
- Freight Settlement

WAREHOUSE MANAGEMENT
- Inbound Processing
- Storage & Operations
- Outbound Processing

Freight Forwarders

Freight Settlers

Carriers
Logistics and Order Fulfillment
Efficient, global, holistic solution

TRANSPORTATION MGMT.
• Shippers, freight forwarders, 3PLs, carriers
• Holistic, multi-mode, multi-stage freight mgmt.
• Domestic, international, in/outbound shipment

WAREHOUSE MGMT.
• All industries
• Distribution centers & production warehouses
• Simple & complex/high volume operations

Strategic Freight Mgmt. & Contract Life-cycle Mgmt.
Capacity & Demand Planning ➔ Order Mgmt. & Freight Planning ➔ Warehouse Execution ➔ Freight Execution & Monitoring ➔ Freight Settlement ➔ Tracking & Reporting
SAP Supply Chain Execution Platform

- Out-of-the-box, real-time integration with Business Suite
- Synchronized solution delivery
- SCE Suite implementation in 1 instance
- Out-of-the-box, seamless integration

SAP Supply Chain Execution Platform

- Transportation Management (TM)
- Extended Warehouse Management (EWM)
- Tracking & Tracing (EM)
- Any DB
- HANA

**SAP S/4HANA**
Integration of Master Data and Business documents
Scheduling of Sales Orders
Integration to FI/CO

**SAP GTS**
Intl Trade
Embargo-Checks
Customs Clearance

**SAP EH&S**
Dangerous Goods check

**SAP CRM**
Integration of Opportunities

**SAP BW**
Reports and Analytics

© 2017 SAP SE or an SAP affiliate company. All rights reserved. I EXTERNAL
SAP Supply Chain Execution

Deep, Native integration with SAP Business Suite

Out-of-the-Box
• Standard, preconfigured interfaces

Real-Time
• Synchronized processes with document flow & life-cycle mgmt.

Supply Chain Execution Platform

SAP TM
Transportation Management

SAP EWM
Extended Warehouse Management
(warehouse execution)

SAP Event management
(tracking and tracing, visibility, alerting)

Lower TCO / TCI

Efficient Planning & Order Mgmt
with change control

Accurate cross system Visibility

SAP S/4HANA / SAP ERP
Enterprise Resource Management
• Purchasing
• Sales, Returns
• Scheduling agreements
• Sales Order scheduling

SAP CRM
Customer Relation. Mgmt.
• Lead and Opportunity integration

SAP EAM
Resource Management
• Maintenance & resource downtimes

SAP GTS
Global Trade Services
• Customs Mgmt.
• Compliance Mgmt.

SAP EHS
Envir. Health & Safety
• Dangerous Goods Management

GIS/ Maps

© 2017 SAP SE or an SAP affiliate company. All rights reserved. | EXTERNAL
Shippers can holistically manage freight needs
Inbound and outbound, domestic and international

- Suppliers
- Carrier
- Shipper
- Freight Forwarder
- Customs Authorities
- Agents & Brokers
- Carriers
- End Customers

Inbound (PO Based)
- Supplier WH
- Shipper Warehouse
- Port

Outbound (Sales Order Based)
- Port
- Warehouse
- Customer WH

SAP EWM
- Sales Purchasing
- Freight Procurement
- Transportation Planning
- Warehouse Execution
- Export/Import Activities
- Freight Settlement
- Track and Trace at item and order level across the entire logistics flow

SAP Event Management (EM)

S/4HANA
- Sales Purchasing
- Freight Procurement
- Transportation Planning
- Warehouse Execution
- Export/Import Activities
- Freight Settlement
- Track and Trace at every stage of the logistics flow
SAP Transportation Management

- Complete transportation management solution
  - International and domestic
  - All modes of transportation including airfreight, covering latest security regulations
  - Compliance with international trade regulations and Dangerous Goods (with GTS and EH&S add-ons)
- Interactive transportation and shipment planning, collaborative tendering
- Integrated logistics and fulfillment management, transportation execution visibility and monitoring
- Comprehensive freight cost management, Integrated freight and forwarding settlement
SAP Transportation Management
Improve asset utilization, customer satisfaction & reduce transportation cost

Consolidate freight and optimize equipment while considering constraints to reduce cost and meet service level

Advanced charge calculations increase error-free carrier invoices

Analyze and monitor shipment data and correlate with business information to prevent shipment delays

Typical results
Organizations adopting transportation management system experience benefits such as

- **7.7%** Lower freight spend
- **16%** Lower outbound expediting costs
- **77%** Shorter average trailer turn
- **13%** Less Invoice Errors

Source: SAP Performance Benchmarking
SAP Transportation Management
Market success so far

Facts and figures

- Fastest growing market player
- Strong customer momentum
  - 600+ Customers
- Analyst recognition
  - Leader’s Quadrant of Gartner Magic Quadrant 2015, 2016 & 2017
  - SAP is again #1 in TMS - ARC Report 2014, 2015, 2016
- Wide geographical coverage
  - Productive use in more than 45 countries and 23 industries

Sample Customers

Customer geographical coverage
SAP TM Supports all Transportation Scenarios
Examples

- Direct truck shipment
- Truck networks
- Multi-modal domestic shipment
- Airfreight D2D
- Airfreight shipment P2P
- Ocean LCL shipment D2D
- Ocean FCL shipment D2D
SAP Transportation Management Supports End-to-End Collaboration
Shipper - LSP - Carrier

End Customer

Shippers Customer places order for goods

Order Acceptance

Shipment Proposal

Shipment Placement

Logistics Operations through LSP

Payment

Pre-Planning

Order Management

Freight Planning

Tendering & Subcontracting

Execution & Monitoring

Freight Settlement

Booking Management

Cargo Planning

Partnering

Execution & Monitoring

 receivables
Bringing Shippers and Carriers / LSPs together with SAP TM

Shipper with own Transportation Planning Capabilities

Shipper w/o own Transportation Planning Capabilities

SAP ERP / SAP S/4HANA

SAP TM

SAP TM

Point-2-point Webservice Integration

Integration Infrastructure(s)

Netweaver Process Integration

Tyson

IATCO

PANALPINA

Canadian Pacific

© 2017 SAP SE or an SAP affiliate company. All rights reserved. | EXTERNAL
Business Process Coverage with SAP TM
Role-based functionality

- Contract Manager
- Transportation Clerk/CSR
- Planner/Specialist (i.e., Tendering)
- Dispatcher
- Charge Clerk

### Strategic Capacity
- Procurement & Network Planning

### Order Management

### Freight Planning & Tendering

### Freight Execution & Monitoring

### Carrier Freight Settlement

---

**Analytics and Reporting**

**Event Management**

**Integrated Customs Processing, Dangerous Goods, and Trade Compliance**

**Standard Document and Output Management for all Modes of Transport**

**Integration and Connectivity**
SAP Transportation Management 9.4

End to End functional capability from solid, continuous investment

**Strategic Capacity Procurement & Network Planning**
- Strategic Freight Procurement
- Strategic Freight Sales
- Contract Negotiation
- Ocean and Air schedule and Capacity Management
- Carrier Booking
- Descartes Integration

**Order Management**
- Integrated ERP Transportation Demand
- Integration with ERP scheduling agreements
- Sales and Stock Transfer Order Scheduling
- Order Life-Cycle Management & Visibility
- Order Management for Rail
- Empty Container/Railcar Provisioning and Return
- Handling Unit Integration
  - SOLAS

**Freight Planning & Tendering**
- Route planning and Optimization
- Transportation Load Planning
- Load Consolidation
- Package / Pallet building
- Manual Trailer and Multi level equipment planning
- Planning with Gantt Chart
- Planning for Rail, Container
- Fleet Management
- Backhaul Planning
- Planning of Parcels
- Carrier Selection and Tendering
- Map-based Planning
- Driver Planning
- Resource Planning - rail/ container fleet

**Freight Execution & Monitoring**
- Integrated Warehouse Execution
- Transit Warehouse Scenario
- Shipment Tracking & Communication
- Comprehensive Freight Document Management
- Global Trade Compliance
- Customs Declaration and Security filings
- Yard Logistics Integration

**Freight Charges and Settlement**
- Freight Contract Management
- Freight agreement Rate changes
- Freight Charge Calculation (for all modes incl. parcel)
- Cost Distribution
- Cost transparency and visibility (Profitability)
- Fuel Surcharge Calculation
- Event Based Charges
- Freight Settlement
- Multiple Carrier Invoice
- Invoice Dispute Management
- Group Company Logistics

**Collaboration Portal**

New innovation with TM 9.4
Enhanced in TM 9.4
SAP Transportation Management
Analytics, Supporting Technology, and Integration

**Strategic Capacity Procurement & Network Planning**

**Order Management**

**Freight Planning & Tendering**

**Freight Execution & Monitoring**

**Freight Charges and Settlement**

**Analytics and Reporting**
- Operational Worklists
- Embedded Analytics
- SAP Smart Business for T&L
- Smart Business for TM
- BW for TM

**Integration and Connectivity**
- Collaboration Portal
- EWM Integration
- PM Integration

**Document and Output management**
- For all modes of transport
- Approval workflows

**Flexibility, Adaptability, Scalability**
- Open architecture
- Integration and scalability
- Role-based user management
- User-based personalization
- Customer-specific extension

**Dangerous Goods and Trade Compliance**
- EH&S Integration
- DG Check during planning
- Shippers declaration
- 1000 point rule

**Comprehensive ERP Master Data Integration**
- Business Partners
- Network
- Resources/Assets
- Financials
## Key Benefits from SAP TM

<table>
<thead>
<tr>
<th>Area</th>
<th>Benefits</th>
<th>SUMMARY</th>
</tr>
</thead>
</table>
| **Transportation Sourcing and Forecasting** | • Saving from Optimal freight procurement and negotiation  
• Completely automated process directly on the SAP TMS system and does not require any integration  
• Reduce time to gather data for the freight forecast and contract negotiation  
• Simulate freight spend with supporting what-if analysis  
• Ability to measure compliance with agreements  
• Standardize freight contracting process across the organization | • Higher business productivity with more automated processes, electronic collaboration and reduced redundancies  
• **End to end Transportation visibility**  
• Freight spend savings can range from 2-20% (consolidation, negotiation, higher utilization and reduction in expedites and overheads)  
• Cash flow improvements through accurate costing and settlement  
• Improve service levels (on time deliveries)  
• Centralized transportation operations and standardization  
• **Much quicker decisions with real time analytics**, fast insights and reduced data complexity  
• Improved and **real-time freight cost analysis** |
| **Transportation Planning** | • Optimal mix of modes, routes, and resources for lowest cost transportation while meeting all delivery commitments  
• Higher Truck and capacity utilization levels – more fully loaded equipment  
• Reduction in freight planning effort  
• Dynamically respond to changes in requirements  
• Optimum utilization of freight contracts, through usage of preferred carriers  
• Streamlined, electronic and real-time carrier communication process |                                                                                                                                                            |
| **Transportation Execution and Visibility** | • Improved shipment visibility with electronic Track & Trace capabilities and cross-system document flow  
• Improved service levels with reduction in delays and lower expediting costs  
• Reduction in total Demurrage Expense, Penalty And Fine Related Charges (due to delays in logistics execution, expediting, un-planned down-time)  
• Out-of-the-box transportation, warehouse integration, customs processing reduces TCO |                                                                                                                                                            |
| **Transportation Charge Management** | • Reduce manual processes in freight costing with completely automated charge calculation  
• Integrate freight costing with billing and financials  
• Reduction in carrier overcharges, unplanned accessorrial charges  
• Reduction in invoice inaccuracy, full auditing and tracking of freight costs | Reduced TCO through a future proof transportation platform fully integrated with your SAP landscape |
Strategic Freight Management and Network Planning

Business Scenario

**Strategic Freight Procurement**

**Goal:** Freight Agreement with Carrier

1. Freight RFQ
2. Response

**Strategic Freight Sales**

**Goal:** Forwarding Agreement with Customer

1. Freight RFQ (SFP)
2. Quotation
3. Forwarding Agreement Quotation Response

Starting Point

© 2017 SAP SE or an SAP affiliate company. All rights reserved.
Strategic Freight Procurement
End-to-end Process

- **Pre-Bid Evaluation**
  - Transportation Forecast
  - Insights

- **Bid Preparation**
  - Carrier selection
  - RFQ Preparation
  - Target rates

- **Carrier/LSP Collaboration**
  - RFQ Response Preparation (excel supp.)
  - Negotiation
  - B2B communication

- **Post-Bid Evaluation**
  - Response Evaluation
  - Post-Bid Analysis
  - Spend calculation
  - Optimization

- **Contract Award**
  - Agreement/Contract Award
  - Agreement consumption

Freight Procurement Process:
- One system with open interface for all related process without modification
- Insight to action-based process flow – Historical Data, Bid Preparation, Spend analysis, Award
- Simple modeling of complex scenarios/packages, industry templates
- Powerful Simulations/What-If
- Efficient information exchange with carriers/LSP with alerting (collaboration portal enabled)
SAP Transportation Management

- Order Management
- Transportation Planning
- Transportation Execution
- Freight Settlement
- Analytics
SAP Transportation Management

- S/4HANA Order/ Delivery Integration
- Order / Booking Management
- Personal Worklists
- Schedule mgmt.

Business Benefits

- Efficient end-to-end order & process management
- Dynamically generated, optimized routing proposals based on business rules – extra freight cost avoidance and better customer service
Order Management
Integrated S/4HANA Transportation Demand

Integrated Order-to-Cash / Procure-to-Pay Processes

S/4HANA Transportation Demand
- Sales orders
- Purchase orders
- Stock transport orders
- Returns
- Inbound / Outbound deliveries
- Shipments
- Scheduling Agreements

- Holistic integration and management of all transportation demand
- Synchronized sales and STO (ATP) and transportation scheduling
- Full cross-system order access and life-cycle status visibility
SAP Transportation Management

Order Management
- S/4HANA Order/Delivery Integration
- Order/Booking Management
- Personal Worklists
- Schedule mgmt.

Transportation Planning
- Manual & Automated Planning & Dispatching
- Routing, Resource & Carrier Selection
- Order Tendering
- Dangerous goods management

Transportation Execution

Freight Settlement

Analytics

Business Benefits
- Improved resource utilization and carrier selection reduces transportation costs
- Handle huge volume of data by automated planning process
- Combine decentralized, local business views to identify synergies
- On time delivery
Freight Planning & Tendering
Advanced Freight Planning & Optimization

Optimal Transportation Planning & Resource Utilization

Holistic
- All freight demand & resources
- All geographies & modes
- Carrier selection and tendering

Effective
- Manual, map-based & automated planning
- Transportation proposal, vehicle scheduling & routing optimization
- Rail & Parcel planning, Backhaul planning
- Resource based planning on Gantt Chart

Advanced
- Powerful & flexible planning strategies
- Extensive rules & constraints
- Automated Load Planning & Vehicle Space Optimization
- Pallet / Package building
- Map based resource tracking
- Dynamic replanning

Compliant
- Dangerous goods planning
- Trade regulation checking
SAP Transportation Management
Flexible/Collaborative Carrier selection and Freight Tendering

Rules-based Carrier Determination
- Freight agreements
- Costs
- Lane Allocations
- Business share

Multi-variant Tendering
- Peer-to-Peer RFQ
- Broadcast RFQ
- Direct freight order assignment

Flexible Collaboration
- B2B, Web-based UI, Portal, Email, SMS communication
- Authorization-based RFQ data viewing & processing
- Real-time tendering process, status monitor & dynamic change controller
Visibility on usage and availability of your own fleet (trucks, trailers) and handling resource utilization
- Interactive resource-based planning by drag and drop (at freight unit level) with context determination
- Real-time planning in the cockpit by adjusting plan based on reported events
- Gantt chart and map integrate geographical and time perspective
Package & Load Planning
Automated Pallet/package building, Load Planning and Optimization

- Rule based building of product pallets and mixed pallets
- Considers constraints such as pallet attributes, product stacking rules, customer specific requirements
- Loading pallets into trucks, trailers, containers
- Rules-based load optimization considering
  - Vehicle Attributes, Dimensions
  - Axle weight constraints, Stacking rules
  - Stop Sequence, US Bridge Formula
  - Uniform loading pattern for truck, trailer
  - etc.
- Combine packages of different stops into one stack
- 3D Graphical visualization of load plan
- Graphical load visualization
- Loading list
- Configurable UI
### 60+ Available Load Planning Rules

<table>
<thead>
<tr>
<th>Load Planning Rule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>Stack height ascending in driving direction</td>
</tr>
<tr>
<td>1001</td>
<td>Stack height descending in driving direction</td>
</tr>
<tr>
<td>1100</td>
<td>Maximum height difference of adjacent stacks</td>
</tr>
<tr>
<td>1101</td>
<td>Maximum height difference of stacks within a row</td>
</tr>
<tr>
<td>1102</td>
<td>Maximum height difference of adjacent stacks from front to back</td>
</tr>
<tr>
<td>2000</td>
<td>Penalty cost for packages that cannot be loaded based on weight</td>
</tr>
<tr>
<td>2001</td>
<td>Penalty cost for packages that cannot be loaded based on weight x volume</td>
</tr>
<tr>
<td>2100</td>
<td>Packages with high density must be at bottom of stack</td>
</tr>
<tr>
<td>2101</td>
<td>Packages can be positioned anywhere in stack regardless of weight and density</td>
</tr>
<tr>
<td>3000</td>
<td>Maximum deviation of weight from center of cargo body to left and right (percentage)</td>
</tr>
<tr>
<td>5000</td>
<td>Uniform loading pattern for truck</td>
</tr>
<tr>
<td>5001</td>
<td>Uniform loading pattern for trailer</td>
</tr>
<tr>
<td>5062</td>
<td>Uniform loading pattern for trailer upper deck</td>
</tr>
<tr>
<td>5010</td>
<td>Detailed loading pattern for truck</td>
</tr>
<tr>
<td>5011</td>
<td>Detailed loading pattern for trailer</td>
</tr>
<tr>
<td>5012</td>
<td>Detailed loading pattern for trailer upper deck</td>
</tr>
<tr>
<td>5021</td>
<td>Trailer: load all packages turned</td>
</tr>
<tr>
<td>5022</td>
<td>Trailer: load all packages straight, turned at begin if necessary</td>
</tr>
<tr>
<td>5023</td>
<td>Trailer: load all packages straight, turned at end if necessary</td>
</tr>
<tr>
<td>5024</td>
<td>Trailer: load all packages straight</td>
</tr>
<tr>
<td>5025</td>
<td>Trailer: load all packages turned, straight at begin if necessary</td>
</tr>
<tr>
<td>5026</td>
<td>Trailer: load all packages turned, straight at end if necessary</td>
</tr>
<tr>
<td>5031</td>
<td>Trailer upper deck: load all packages turned</td>
</tr>
<tr>
<td>5032</td>
<td>Trailer upper deck: load all packages straight, turned at begin if necessary</td>
</tr>
<tr>
<td>5033</td>
<td>Trailer upper deck: load all packages straight, turned at end if necessary</td>
</tr>
<tr>
<td>5034</td>
<td>Trailer upper deck: load all packages straight</td>
</tr>
</tbody>
</table>
SAP Transportation Management

**Order Management**
- S/4HANA Order/Delivery Integration
- Order/Booking Management
- Personal Worklists
- Schedule mgmt.

**Transportation Planning**
- Manual & Automated Planning & Dispatching
- Routing, Resource & Carrier Selection
- Order Tendering
- Dangerous goods management

**Transportation Execution**
- EWM integration for warehouse execution
- Logistics Execution
- Execution monitoring & event tracking
- Capacity Monitoring
- Transportation print documents
- Trade regulation compliance (via GTS)

**Freight Settlement**

**Analytics**

---

**Business Benefits**
- Out-of-the-box transportation, warehouse integration, customs reduces TCO
- Proactive event management improves execution quality and customer service
Warehouse Integration
Integrated Warehouse Execution with SAP EWM

Freight Order – Transportation Unit Integration

SAP Enterprise Resource Planning
- Customer order
- Delivery

- Transportation Planning
- Freight Order Management
- Freight Settlement
- Picking, Packing, Staging
- Loading
- Goods Issue

End to end Transit Warehouse Scenario ★

SAP TM
- Package tracking over complex transport network
- Transparency on warehouse data
- Send (un)loading request to SAP EWM

SAP EWM
- Packages instead of products
- Process control based on (un)loading request from SAP TM
- Receive, consolidate, load
- Supports HU hierarchy

Transit through regional hubs, gateways and CFS
★ New LSP functionality with SAP TM 9.3

© 2017 SAP SE or an SAP affiliate company. All rights reserved. | EXTERNAL
SAP Transportation Management
TM – EWM Integration

Direct Integration between SAP TM and SAP EWM for Shippers

Exchange of Load Plan / Loading Report
– Load Planning is performed in SAP TM based on business objects
  ▫ Trailer Unit, Container Unit, Rail Car Unit

Inbound and Outbound Process in SAP TM
  ▫ Order based
  ▫ Delivery based
  ▫ Customer returns process

Tighter integration of master data and customizing

Unified communication via services
SAP Transportation Management
TM – EWM Integration

ERP/ TM

Order Processing
- Sales order or delivery creation
- Automatic transportation request creation
- Automatic freight unit creation

TM

Transportation Planning
- Interactive / automatic transportation planning
- Freight order creation
- Carrier selection
- Carrier tendering
- Automatic delivery creation

EWM

Warehouse Execution
- Wave creation
- Picking optimization, packing, staging and load mgmt.
- Value-added services
- Waybill print

TM

Freight Execution
- Transportation execution monitoring and event tracking

TM / ERP

Freight Order Settlement
- Transportation charge calculation
- Freight invoice request creation
Comprehensive, Flexible Communication & Collaboration

via…B2B, Carrier Portal, Mobile Apps, WebUIs, File up/download, Print Documents, Email, Fax, SMS…

Shippers
• Rates
• Schedules
• Agreements
• Tenders / Quotations
• Freight Orders / Bookings
• Freight Documents
• Shipping Status / Events
• Invoices (via ERP)

Business Partners
TM Collaboration Portal

Major features

Web-portal for business partner collaboration

- Process Coverage
  - Freight Tendering
  - Event Notification
  - Self-Billing and Invoice Submission
  - Dispute Management
  - Strategic Freight Procurement
- Role-specific views
  - Vendors, consignees, carriers and logistics service providers
- Any Device, HTML5, All common browsers supported
- Small / mid size carriers do not need to have SAP TM installed
Document and output management details
Comprehensive workflow, document, and output functions

Standard transportation document templates:
• Comprehensive set of preconfigured, standard documents:
  - Including product, export, dangerous goods, and transportation data
• For road, sea, and air transportation:
  - Road waybill (Europe and United States), house air waybill, and house sea BL
  - Shipping manifest
  - Transportation labels
  - FIATA forwarding instructions
• For freight settlement:
  - Supplier freight invoice request
  - Customer freight invoice request

Flexible output & life-cycle mgmt.
• Automatic/manual printing, email, fax, B2B communication
• Full life-cycle mgmt. (workflow, alerts, status tracking ….)
International, Cross-System Shipment & Event Tracking
Integrated Event Management

Comprehensive Shipment Tracking
• Freight units, orders, bookings, & containers
• End-to-end (across pre-, main- & on-carriage)
• Cross-system & organization
• Shipper, carrier & consignee views
• Full milestone tracking - from loading begin to proof-of-delivery
• Flexible event notification & handling
• Map-based event location visibility
• Instruction tracking for SOPs

Mobile Enabled
Geo Tracking on Map
Alerting and Notification
Reporting dashboard
SAP TM Implementation – Impacts on Process

Legend: = expected event = unexpected event
SAP Transportation Management

Order Management
- S/4HANA Order/ Delivery Integration
- Order / Booking Management
- Personal Worklists
- Schedule mgmt.

Transportation Planning
- Manual & Automated Planning & Dispatching
- Routing, Resource & Carrier Selection
- Order Tendering
- Dangerous goods management

Transportation Execution
- EWM integration for warehouse execution
- Logistics Execution
- Execution monitoring & event tracking
- Capacity Monitoring
- Transportation print documents
- Trade regulation compliance (via GTS)

Freight Settlement
- Freight Agreement Management
- Charge & Tariff Mgmt.
- S/4HANA integration: Freight Settlement
- Transportation charge calculation

Analytics

Business Benefits
- Accurate transportation costing
- Integrated transportation management & billing
- Reduced invoice inaccuracy
SAP Transportation Management

**TM Charge Management**
- Master data cockpit
- Comprehensive agreement mgmt.
- Flexible charge & rate management
- Advanced freight charge calculation

**ERP Freight Settlement**
- Accruals posting
- Carrier self-invoicing
- Invoice verification & payment
- Credit memo processing

**ERP Freight Cost Accounting**
- General ledger posting
- Material valuation
- Sales order profitability analysis
Accurate, Integrated Freight Costing, Settlement & Reporting

TM Charge Management
- Master data cockpit
- Comprehensive agreement mgmt.
- Flexible charge & rate management
- Advanced freight charge calculation, Cost distribution

S/4HANA Freight Settlement
- Accruals posting
- Carrier self-invoicing
- Invoice verification & payment
- Credit memo processing
- Dispute management
- Group Company Logistics Scenario

S/4HANA Freight Cost Accounting
- General ledger posting
- Material valuation
- Sales order profitability analysis

Freight Cost Reporting
- Interactive freight cost dashboard
- Flexible business warehouse cost reporting
Freight Charges & Settlement
Comprehensive Rate Calculation, mode Specific & Advanced Capabilities

- **Comprehensive Rates**
  - Various origin / destination point classifications such as point-to-point, point-to-zip, point-to-state, zip-to-zip and state-to-state
  - Rates based on Equipment (container type / size)
  - Commodity rates, Freight all kind
  - Minimum, Maximum rates
  - Weight/Volume rates, Break weight, Volumetric rate
  - Distance rates
  - Handling rates and Surcharges
  - Discounts
  - Possible others special rates : Tolls, Taxes

- **Advanced Capabilities**
  - Charging for parcels
  - Collective order rate lookup
  - Condition based charges, Event based charging
  - Agreement consumption

**Usability : Excel upload of Rate tables Filters, mass upload**

---

**Mode Specific**

**Rail**
- Rule 11 on freight order
- New resolution base for resources
- Railcar based rating with day of week pricing
- Resource ownership based calculation

**Air and Ocean**
- Commodity based charges
- Prepaid and Collect on Ocean Booking
- Index table based fuel surcharge calculation
- Air TACT and contract rating with SCR, ULD
Integrated Freight Cost Settlement

**S/4HANA FINANCIAL MANAGEMENT**

- **Carrier/Supplier Settlement**
  - Accruals posting
  - Evaluated receipt settlement
  - Invoice verification & payment
  - Credit memo processing
- **Freight Cost Accounting**
  - General ledger posting
  - Material valuation
  - CO-PA sales order profitability
- **Cost Distribution**
- **Group Company Logistics**
- **Invoice dispute management**
- **Flexible invoicing**
- **Event Based Charges**

**Invoice Dispute Management**

- **Collaborative invoice dispute management over Portal**
- **Tolerance settings and workflow**

---

**Group Company Logistics**

- Enables centralized operations, consolidation and standardization of logistics
SAP Transportation Management

Order Management
- S/4HANA Order/ Delivery Integration
- Order / Booking Management
- Personal Worklists
- Schedule mgmt.

Transportation Planning
- Manual & Automated Planning & Dispatching
- Routing, Resource & Carrier Selection
- Order Tendering
- Dangerous goods management

Transportation Execution
- EWM integration for warehouse execution
- Logistics Execution
- Execution monitoring & event tracking
- Capacity Monitoring
- Transportation print documents
- Trade regulation compliance (via GTS)

Freight Settlement
- Freight Agreement Management
- Charge & Tariff Mgmt.
- S/4HANA integration: Freight Settlement
- Transportation charge calculation

Analytics
- HANA dashboards
- Landed Cost Analysis
- Flexible business warehouse cost reporting

Business Benefits
- Real time data- and fact-based driven decision making
- Fast insights and reduced data complexity
Reporting & Analytics for Transportation & Logistics

- Comprehensive, flexible, instant reporting & decision support

Role/User-Specific Worklists

Embedded, Contextual Analytics

Adhoc Reporting/ Queries

Graphical Dashboards

SAP Supply Chain Execution Suite (SAP TM)

SAP Business Warehouse

SAP HANA

SAP in-memory computing
SAP Smart Business for Transportation Management

Description
• Supports the transportation manager in the identification and valuation of his operational business and provides cost and revenue based information in real time.

Capabilities
• Real-time analysis of forwarding and freight orders as well as ERP order and delivery based transportation requests, costs, revenues, utilization, discrepancies and dangerous goods and other important key figures
• Drill-down and insight-to-action capabilities
• Collaboration via e-mail and SAP JAM
• Virtual data model providing a harmonized data access to transportation management analytical data

Key performance indicators
• Transportation Cost
• Transportation Cost by Volume
• Transportation Cost by Weight
• Transportation Cost by Weight and Distance
• Transportation Revenue
• Transportation Profit
• Transportation Requirements
• Forwarding Orders

• Freight Orders
• Transportation Discrepancies
• Average Utilization
• Average Vehicle Resource Utilization
• Dangerous Goods
• Transported Volume
• Transported Weight
SAP Smart Business for Event Management

Description
- SAP Smart Business for Event Management is a collection providing an overview of the most important key performance indicators for a transportation manager. It allows the transportation manager to monitor the operational transportation business based on the latest reported events.

Capabilities
- Delays of deliveries or freight orders in transit or those that arrived at customer sites with an overdue proof of delivery (POD)
- Different On-Time Performance measures, reflecting sensitive spots in your supply chain
- Average cycle times (time between the actual event dates and times of: when picking begins and the last event POD)
- Reporting completeness and compliance – what percentage of transports were reported and how accurate were those reports?

Key performance indicators
- Avg. Cycle Time Delayed Deliveries POD
- Avg. Cycle Time of Deliveries
- Average Delay Time (POD)
- Delayed Deliveries (in Transit)
- Delayed Deliveries (POD)
- Delayed Deliveries (Total)
- Reporting Completeness
- Reporting Compliance
- On-Time Performance Departure
- On-Time Performance Arrival
- On-Time Performance POD
- Delayed Freight Orders In Transit
- Average Delay Time
Roadmap SAP TM
Legal Disclaimer

The information in this presentation is confidential and proprietary to SAP and may not be disclosed without the permission of SAP. This presentation is not subject to your license agreement or any other service or subscription agreement with SAP. SAP has no obligation to pursue any course of business outlined in this document or any related presentation, or to develop or release any functionality mentioned therein. This document, or any related presentation and SAP’s strategy and possible future developments, products and or platforms directions and functionality are all subject to change and may be changed by SAP at any time for any reason without notice. The information on this document is not a commitment, promise or legal obligation to deliver any material, code or functionality. This document is provided without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement. This document is for informational purposes and may not be incorporated into a contract. SAP assumes no responsibility for errors or omissions in this document, except if such damages were caused by SAP intentionally or grossly negligent.

All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of their dates, and they should not be relied upon in making purchasing decisions.
### SAP S/4HANA Supply Chain: Solution Strategy

<table>
<thead>
<tr>
<th>Year</th>
<th>LoB Extensions</th>
<th>Products</th>
<th>Digital Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>1511</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1610</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1709</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### LoB Extensions
- SAP Advanced Planning and Optimization
- Customer and Supplier Collaboration
- Extended Warehouse Management
- Transportation Management
- Supply Chain Event Management
- Integrated Business Planning
- SCM Control Tower

#### Products
- Advanced rules based ATP (foundation)
- Inventory management
- Material valuation
- Production Planning / MRP
- Basic Shipping, Basic Warehousing
- Standard ATP

#### Digital Core
- Inventory management
- Material valuation
- Production Planning / MRP
- Basic Shipping, Basic Warehousing
- Standard ATP

**This is the current state of planning and may be changed by SAP at any time.**

© 2017 SAP SE or an SAP affiliate company. All rights reserved. | EXTERNAL
SAP S/4HANA – Principle of One

One System – Simplification – No Data Redundancy

- S/4 UI for TM: Fiori Launchpad tiles
- Harmonized Master Data
- Direct Usage of S/4 Customizing
- Integrated Transportation Process
Basic Shipping within SAP S/4HANA

**Basic Shipping**

- Defined collection of business processes relevant for shipping within SAP S/4HANA Enterprise Management
- The processes can be implemented with SAP S/4HANA Release 1511 with LE-TRA and used until end of life of the Compatibility Scope
- It is planned that these processes can be implemented with selected functions of SAP S/4HANA TM – As of S/4HANA 1709
- Both technical Applications can be used independently of each other on the same S/4HANA database instance
- They have no data exchange / integration within the shipping process
- Longterm the collection of basic shipping processes will only be realized by using selected functions of SAP S/4 HANA TM

2269324 - Compatibility Scope Matrix for SAP S/4HANA, on-premise edition

This is the current state of planning and may be changed by SAP at any time.
Basic Shipping within SAP S/4HANA

Basic Shipping

- Basic Transportation Planning (Delivery Note Selection)
- Inbound Shipment Management
- Outbound Shipment Management (Delivery Note based)
- Transportation Execution without Event Management
- Shipment Cost Processing
- Tendering for Service Agents
- Shipment Monitoring

This is the current state of planning and may be changed by SAP at any time.
Transportation Management planned within SAP S/4HANA

SAP S/4HANA Supply Chain for Transportation Management

- Provide best-of-breed transportation functionality (on base of latest SAP Transportation Management) in SAP S/4HANA

- It is planned that all main shipper processes can be implemented with SAP S/4HANA TM –Available as of S/4HANA1709

This is the current state of planning and may be changed by SAP at any time.
Transportation Management planned within SAP S/4HANA

SAP S/4HANA Supply Chain for Transportation Management
- Harmonized Master Data and Customizing
- Harmonized Transportation Scheduling
- Combined Inbound / Stock Transfer / Outbound Transportation Process for Shippers
- Transportation Cockpit
- Order and Delivery Based Planning Process
- Vehicle Scheduling Routing Optimization
- Automated Carrier Selection
- Driver Management
- Load Consolidation
- Package Building
- Load Planning / Load Optimization
- Integration into Supply Chain Logistics
- Integration into Financials
- Integration into Yard Logistics (CD)
- Incorporated Tendering Management
- Carrier / Service Billing
- Dispute Management
- Embedded Core Data Service based Analytics
- Strategic Freight Management
- Event Management (use for Transportation Events)

© 2017 SAP SE or an SAP affiliate company. All rights reserved. I EXTERNAL

This is the current state of planning and may be changed by SAP at any time.
Product Master
Direct read of central product master

Current usage
- CIF to transfer Material Master
- Different numbering
- Different address check routines

Expected Benefits
- Reduce DB footprint
- Reduce TCO (avoid replication & monitoring)
- Simplified set-up and operations

This is the current state of planning and may be changed by SAP at any time.
Business Partner
Direct read of central business partner instead of replication

Current usage
- CIF to transfer customer / vendor
- Different numbering
- Different address check routines

Expected Benefits
- Reduce DB footprint
- Reduce TCO (avoid replication & monitoring)
- Simplified set-up and operations

This is the current state of planning and may be changed by SAP at any time.
One Transportation Process

**ERP**
- Purchase/Sales / Stock Transfer Order
  - Delivery
  - Carrier Invoice

**TM**
- Transportation Request
- Freight Unit
- Transportation Operation
- Trigger Delivery / Movement
- Charge Mangement / Settlement

**TM in SAP S/4HANA**
- SO / PO / STO
- Delivery / Movement
- Freight Units
- TM Operations / Charge Management / Freight Settlement
- Carrier Invoice

This is the current state of planning and may be changed by SAP at any time.
Embedded TM Analytics in SAP S/4HANA
Using Core Data Services

1. SAP TM
2. SAP Fiori launchpad
3. Overview page
4. Quantities
5. Freight Order

This is the current state of planning and may be changed by SAP at any time.
Deployment Options

Current

SAP ERP

SD-SLS
SD-BIL
MM-PUR
MM-IV
LO-AB

LE-TRA

SAP TM standalone

S/4 HANA Enterprise Management

SD-SLS
SD-BIL
MM-PUR
MM-IV
LO-AB

LE-TRA

SAP TM standalone

*Planned MidTerm

S/4 HANA Enterprise Management

SD-SLS
SD-BIL
MM-PUR
MM-IV
LO-AB

LE-TRA

TM

SAP TM standalone

*Planned Long Term

S/4 HANA Enterprise Management

SD-SLS
SD-BIL
MM-PUR
MM-IV
LO-AB

LE-TRA

TM

SAP TM standalone

*This is the current state of planning and may be changed by SAP at any time.
## SAP S/4HANA Supply Chain for Transportation Management

### 2017 – Planned innovations**

**SAP Transportation Management (SAP TM) embedded in SAP S/4HANA**

- Provide system and process integration within SAP S/4HANA Enterprise Management
- Harmonize transportation master data and customizing
- Provide user interface for SAP S/4HANA (SAP Fiori Launchpad)
- Manual Planning and Optimization
- TM: real-time embedded analytics

**SAP Transportation Management embedded in SAP S/4HANA**

- Continued System and Process Integration
- Advanced Driver Planning
- Integration to Cloud based Track & Trace
- Starting Collaboration via Logistics Business Hub
- Selected Topics for feature parity with LE-TRA
- Simplified Integration of SAP TM and SAP Extended Warehouse Management embedded in SAP S/4HANA

### 2018 – Product direction**

**SAP Transportation Management embedded in SAP S/4HANA**

- Industry specific enhancements Retail E-Commerce Direct Store Delivery
- Further Topics on Feature parity with LE-TRA
- Integration to external planning and cooperation between shipper and forwarding agent
- Starting Common transportation scheduling (aligned with sales and distribution, extended warehouse management, advanced ATP, and so on)
- Integrated supply chain planning and execution, such as forecasting or real-time strategic planning and simulation
- Bulk enhancements (TM as a base)

### 2019 – Product vision**

- **This is the current state of planning and may be changed by SAP at any time without notice.**
Key links for more information
For customers and partners

Key links

- Road maps on SAP.com/roadmaps  http://www.sap.com/roadmaps
- SAP Community Network  https://www.sap.com/community
- IT Planning Resources  https://service.sap.com/~sapidb/011000358700001160122012E

Where to go to provide product feedback and ideas

- SAP Idea Place  https://ideas.sap.com
- Influence programs  https://influence.sap.com/
- SAP User Groups  https://www.sap.com/about/customer-involvement/user-groups.html
Thank you.

Contact information:
Elinor Castell
SAP SE
Dietmar-Hopp-Allee 16
69190 Walldorf
elinor.castell@sap.com