SAP Transportation Management –
A Platform for the Future

George Grix, Steelcase
Markus Rosemann, SAP
Our platform strategy for digital supply chain execution

**Functional**
Holistic and vertical

**Integrated**
Support for end-to-end processes

**Flexible**
Processes and deployment

**Connected**
Real-time insight and network communication

Supply chain execution platform

- SAP Extended Warehouse Management
- SAP Transportation Management
- SAP Global Track and Trace

SAP HANA | SAP Cloud Platform

Applications powered by SAP Leonardo

SAP Leonardo IoT Foundation
SAP Extended Warehouse Management (SAP EWM)

**Functional**
- Continuous core improvement for supply chain execution (SCE)
- New industry capabilities

**Integration**
- Enhanced SCE platform integration
- Enhanced integration with SAP S/4HANA

**Deployment**
- SAP EWM in SAP S/4HANA
- SAP EWM with SAP ERP
- Cloud solution

**IoT**
- Next-generation automation
- Enhanced device and asset connectivity
SAP Extended Warehouse Management – overview

Analytics – Transit warehousing – Labor management – Cross-docking – Compliance
Native technologies – Implementation tools
Leading-edge warehouse technology integration

- Mobile devices
- RFID scanners
- Pick by voice
- Augmented reality
- Pagers and phones
- Label printers
- Scales
- Conveyors
- Lifts
- Cranes
- Robots
- Picking systems
- Manufacturing execution systems
- Automated storage and retrieval system (ASRS)
- Automatic guided vehicle (AGV)
SAP Transportation Management (SAP TM)

Holistic transportation management: Comprehensive process and multimodal coverage

- Shipping and freight-forwarding industries
- Large and midmarket enterprises
- Domestic and international transportation
- Inbound and outbound freight management
- Simple and complex high-volume operations

SAP Transportation Management

Capacity and demand planning
Order management and freight planning
Freight execution and monitoring
Freight settlement

Tracking and reporting
Logistics networks – overview

Yard and hub logistics
- Capture and monitoring of location for transportation units
- Geofences for automatic and manual notifications
- Role-based access and functionalities

Sensing and responding to logistics information
- Gain visibility into location and condition of your goods and assets along the entire supply chain
- Perform better management by exception through real-time visibility into shipments, assets, and processes

Item serialization and product traceability
- RFID-enabled and auto ID-enabled business processes
- Capture of serial numbers during production and distribution
- Support for the global GS1 standard EPCIS
- Monitoring of serialized product lifecycle events and processes
- Advanced analytics and authority reporting
# Road map for digital logistics

<table>
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<tr>
<th>Today</th>
<th>Planned</th>
<th>Future direction</th>
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<td><strong>Warehouse management</strong></td>
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<tr>
<td>- E-commerce returns</td>
<td>- Industry-related enhancements for e-commerce and retail</td>
<td>- Automotive industry extensions</td>
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<td>- SAP Extended Warehouse Management embedded in SAP S/4HANA</td>
<td>- Internet of Things (IoT) scenarios</td>
<td>- Expanded warehouse automation</td>
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<td>- Basic shipping</td>
<td>- Quality management feature parity for embedded SAP EWM in SAP S/4HANA</td>
<td><strong>Transportation management</strong></td>
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<td>- Retail enhancements, such as milk runs</td>
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<td>- Transit warehouse enhancements</td>
<td>- SAP Transportation Management embedded in SAP S/4HANA</td>
<td>- Common transportation scheduling</td>
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<td>- Usability and analytics</td>
<td>- Internet of Things (IoT) scenarios</td>
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<td>- Collaboration portal enhancements</td>
<td>- Quality management feature parity for embedded SAP EWM in SAP S/4HANA</td>
<td>- Product T&amp;T across business networks</td>
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<td>- Logistics T&amp;T</td>
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<td>- Yard logistics</td>
<td>- Generic track-and-trace (T&amp;T) services based on IoT application services platform</td>
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<td>- Networked logistics hub</td>
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<td>- Handling unit traceability in the SAP Global Batch Traceability application</td>
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This is the current state of planning and may be changed by SAP at any time.
Where to find more information on digital logistics

**SAP Solution Explorer** – digital logistics

**SAP Community**
- [http://scn.sap.com/community/scm/event-management](http://scn.sap.com/community/scm/event-management)

**Landing pages**
- [www.sap.com/iot](http://www.sap.com/iot)

**Road maps**
- [SAP S/4HANA](http://scn.sap.com/community/extended-warehouse-management)
- Line of business: Supply chain
Welcome

SAP Transportation Management – A Platform for the Future
Our mission: Create great experiences wherever work happens

Global Office Furniture Industry Leader

FY17 revenue of 3.0 billion USD

100% Make to order/Engineer to order

Highly-configurable product: variable options, finishes and dimensions –

Totaling nearly 42,000,000,000,000,000 SKU possibilities
Steelcase maintains a broad global footprint

- 29 WorkLife Centers
- 15 Manufacturing Facilities
- 7 Business Centers
- 2 Learning + Innovation Centers
- 8 Distribution Centers*
- 800 Dealer Partners

*These spaces are not customer facing
Who we serve

Financial
Government
Education
Healthcare
Technology
Retail
Automotive
Food/Beverage
Home Office
And more…

Deutsche Bank
Amazon
Target
Google
Wayfair
IBM
BASF
State Farm
TED
UnitedHealth Group
BMW
Société Générale
Caterpillar
SAP
Boeing
Toyota
Kaiser Permanente
Air France
Novigo
DANONE
Union Pacific
Healthy Back
Verizon
Army Strong
New York University
Mayo Clinic
USA.gov
Intel
HP
HUawei
Why we chose SAP Transportation Management (SAP TM)

- Global Solution – support multiple ERP systems
- Standardize our logistics processes globally
- Improved reporting and visibility of our logistics processes
- System capable of handling our complex business requirements
Due to our industry and business model we have unique delivery requirements to meet

Job site deliveries are time critical
- Install crews waiting
- Elevator appointments

Job sites often have specific requirements
- Trailer size/service level requirements
- Lift gates/ramps
- Driver requirements (US Citizenship, Union Driver, security cleared)
- Load sequence of grouped freight
- Extra driver for unload assistance or expedited delivery

Dealer warehouse deliveries have much more flexibility and fewer requirements
We perform at ~ 99% on time delivery for all stops
Our SAP Transportation Management journey

- **2014**
  - December: Global Project Kickoff

- **2015**
  - January: North America Go-Live
  - May: Europe Project Kickoff

- **2016**
  - Winter: Europe Go-Live

- **2017**
  - Current Activities: Reporting, Carrier Connectivity, Process Streamlining

- **Future**
  - Global Business Processes
We are using a significant portion of SAP TM functionality

- Inbound, Outbound, Intercompany
- Integration with ERP purchase order, sales order, delivery and shipment
- Forwarding Order for non-ERP supported moves
- Vehicle Scheduling and Routing (VSR)
- Carrier selection and tendering
- Carrier Collaboration Portal
- Cost distribution and freight settlement
We use SAP TM to support inbound, outbound and intercompany freight movements

Inbound
- Supplier shipments to Steelcase plants

Intercompany
- Finished goods to distribution centers
- Plant to plant raw material shipments
- Dunnage material between Steelcase locations

Outbound
- Distribution center to end customer
Steelcase inbound transportation network (Americas)

5 Plants
Inbound transportation planning

Planning Horizon

- Standard – 2 days
- Incremental – 1 day

Purchase orders have short lead times

Inbound planning is performed in the Transportation Cockpit

Inbound planners serve geographical regions
Steelcase intercompany transportation network (Americas)

Finished goods freight is pushed from plants to Regional Distribution Centers (RDCs)

Transportation schedules are used for consistent shipments between Steelcase locations

Demand forecast reports are used to determine if additional trailers are needed
Steelcase outbound transportation network (Americas)

6 RDCs
Outbound transportation planning

Planning Horizon

- Standard – 6 days
- Incremental – 5 days

Optimizer runs in batch every evening

Outbound planners review and revise TM plans

Frequent changes to ship to locations and dates
Carrier collaboration portal from SAP

Tendering
- Tender acceptance
- Tender rejection with reason codes

Freight Settlement
- Dispute rates
- Add accessorial charges
- Notes to shipper (dispute related)
- Attachments

Event Reporting
- Pickup date and time
- Arrival date and time
- Notes to shipper
- Delay events
- Attachments
How we work

Team members hold stand-up meetings every day

Mission control layout

Collaborative space

Inbound and outbound teams sit next to one another
Key Performance Indicators – the Steelcase Logistics Mantra

Fill up the truck

Drive in straight lines

Pick the right carriers
Key Performance Indicators

- Transportation Cost
- Total Miles Driven
- Number of Shipments
- Total Cube
- Number of Shipments

Tips:
- Pick the right carriers
- Drive in straight lines
- Fill up the truck
- Drive in straight lines
Key Performance Indicators – Tools

Custom KPIs

SAP Smart Business

Cost per Mile

Transportation Order Cube
Network Cube

Unplanned Freight Units

Outbound Unplanned Freight Network

308

Inbound Unplanned Freight Units Network

284
Challenges with highly configurable product and specials

Transportation plan

Execution
Our pilot project capturing weight and cube

We are capturing length, width, height, and weight

Scanning the handling unit barcode updates SAP ERP

Delta log created for root cause investigation
We are looking at ways to improve our data for planning.

**SAP ERP**

Handling unit update with length, width, height, and weight

**SAP TM**

SAP Transportation Management utilization is updated

Product is measured and weighed after final assembly.
Love how you work.