Transportation Management with SAP

Considerations and Opportunities for a smooth transition to S4/HANA

Transportation processes form the backbone of modern logistics. As supply chains are increasingly dynamic, efficient and effective, transportation processes become vital for enhancing the overall performance and competitiveness of corporations. In the past SAP heavily invested in its Transportation-Management solutions and now provides shippers, consignees and logistics service providers with the ideal platform for modern transportation planning and execution. From inbound to outbound, domestic and international, inter- and multi-modal, from parcels to bulk, all seamlessly integrated in SAP supply-chain processes.

This SAP investment and SAP's continuous innovation is honored by Gartner's recent 2020 Magic Quadrant for Transportation Management Systems - with SAP constantly occupying a leading position as a software provider of transportation management solutions; and for the 6th time in a row, SAP's TM software also recorded a considerable growth in market share.

Today, all-encompassing SAP packages of SAP TM allow seamless integration into existing company transportation networks. In this Point-of-View (PoV) Document we'd like to share our observations and recommendations about possible deployment and transition options to support customers on their digital journey to SAP TM S/4HANA.

Evolution of SAP TM
From LE-TRA to S4/HANA

Today there are three SAP TM solutions: LE-TRA, TM in SAP Business Suite and S4/HANA TM. For a long time, the transportation component of SAP R/3 Logistics Execution (also known as LE-TRA) was considered as the transportation solution, which incorporated a wide range of shipper functions from delivery-based transport planning to cost calculation and billing.

With the simplification of the overall software architecture and introduction of SAP TM as part of SAP's Business-Suite, SAP not only offered transportation management functionality for shippers, but also for logistics service providers. In combination with constant enhancements for shippers, SAP also integrated this functionality in SAP S4/HANA 1709 making use of both; an unsurpassed technology platform paired with a unique user experience.

From Evaluation to Implementation
Transportation Management with SAP

With SAP TM on S4/HANA, SAP now constitutes the third and most advanced SAP transportation management solution.

We are experts in transportation management based on SAP. From SAP TM as part of SAP's Business Suite - to the latest releases embedded or decentral, leveraging S/4HANA technology, Qinlox supports customers on their digital journey and offers a comprehensive service portfolio from strategic consulting and evaluation to optimization, implementation and integration:

- SAP ERP LE-TRA
- SAP TM Transportation Management
- SAP TM in S/4HANA – "Basic Shipping"
- SAP S/4HANA Supply Chain for Transportation Management

SAP Transportation Management

qin:lox®

Freight Planning & Optimization

Planning & Dispatching
Resource & Carrier Selection
Order Tendering
Capacity Management

SHIPPER

Order Management

Process Integration
Freight Bookings & Orders
Forwarding Orders

Carrier Collaboration & Tendering

FREIGHT FORWARDER / CARRIER

Freight Execution & Monitoring

Logistics Execution
Integration with SAP EWM & SAP YL Analytics
& Operational Reporting
Tracking & Tracing
Visibility & Monitoring

Import / Export
Dangerous Goods & Compliance
Document & Output Management

Freight Settlement

Freight Agreements
Charges & Tariffs
Forwarding & Freight Order Settlement
Strategic Customer Contract Management

Yard Logistics

Planning &Execution
Internal Processes
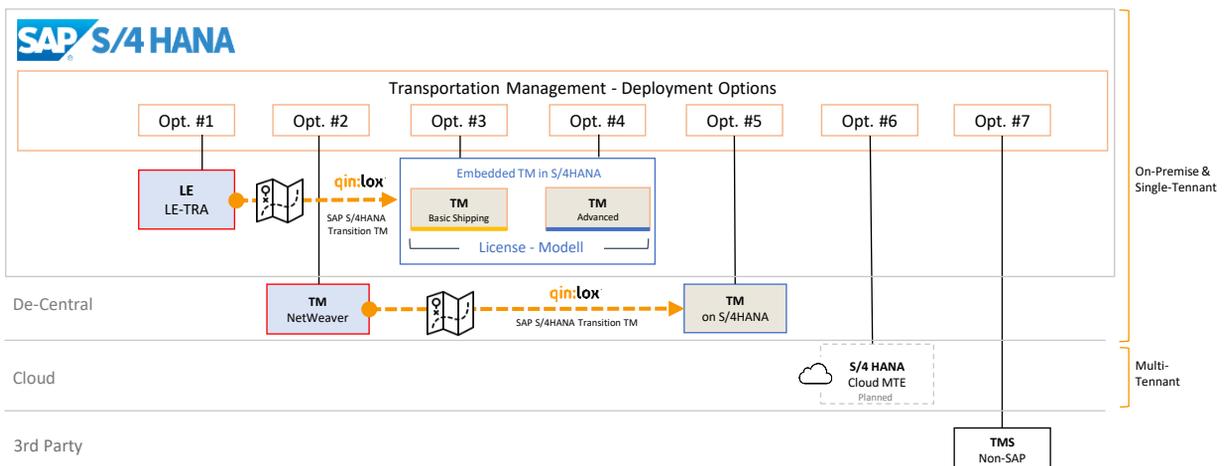Checking, Exceptions & Measurement
Stacking & Location Determination

SAP TM S/4HANA
Business Value and Benefits

Although, at the current stage, most transportation processes can still be managed with LE-TRA or SAP TM as part of SAP's Business Suite, there is ultimately no way around SAP TM based on S4/HANA. SAP LE-TRA is part of the so called "compatibility scope" with guaranteed maintenance until end of 2027 in SAP S/4HANA, while SAP's strategic focus and area of invest will be SAP Transportation Management leveraging latest SAP S4/HANA technology.

The strongest motivation for corporations to move to SAP S4/HANA are the innovations and benefits the new system offers, only to mention its flexible and scalable deployment options, including seamlessly integrated applications for transportation management, known as SAP S/4HANA Supply Chain for Transportation Management, as well as SAP TM in S/4HANA – "Basic Shipping". Standardized logistics processes ensure cost-effective operations, from strategic freight management to transportation planning, from execution to freight cost calculation and billing. In addition, customers can benefit from an increased process automatization, new business cases for more efficient resource allocation and significantly improved transportation planning.

Following a lean data management approach helps to eliminate performance gaps and decreases data redundancy. SAP Fiori adds a new generation user experience and – in combination with embedded analytics - allows much faster decision-making and real-time process control. As transportation processes are crucial for shippers, a simplified integration with other SAP Supply Chain Execution products, including Extended Warehouse Management (SAP EWM), Yard Logistics, or cloud solutions such as Logistics Business Network (LBN) add additional business value. Finally, the usage of the SAP Cloud Application Programming Model (CAP) and the ABAP RESTful Programming Model (RAP) provide best options for delivering innovative and tailor-made customer extensions.

SAP S/4 HANA

Transportation Management - Deployment Options

| Opt. #1 | Opt. #2 | Opt. #3 | Opt. #4 | Opt. #5 | Opt. #6 | Opt. #7 |

On-Premise & Single-Tennant

De-Central

Cloud — Multi-Tennant

3rd Party

If SAP TM is used as an integral part of SAP S/4HANA, it's fully integrated with the internal components for procurement, shipping, inventory, product safety, warehousing, billing and sales. The digital core, products, and suite components of SAP S/4HANA can basically be operated in four different deployment options: On-Premise deployment, Application Hosting, Private-managed cloud deployment and Public-managed cloud deployment.

Conversion and Transition to TM on S/4HANA

Transition from LE-TRA

As mentioned before, LE-TRA remains the most widespread solution from SAP in the transport environment and that makes the question of switching from LE-TRA to S/4HANA even more important. It is also important to understand that the termination of maintenance coming in 2027 should not be the only reason to change to TM processes in S/4HANA. When evaluating the possible update to SAP S/4HANA, it is essential to consider the potential streamlining of processes through the modern digital platform, new functionalities and an associated cost optimization of TM processes. In addition – it is truly a reengineering opportunity. Considering the extended functional scope of S/4HANA, it is essential to re-think some of the existing and historically grown "Z-Coding" in LE-TRA as well as obsolete workarounds and system enhancements in SAP ERP.

In this context, the transition from LE-TRA to SAP TM S/4HANA, especially when it comes to conversion, migration, integration and the implementation of transportation-Processes, typically raise a bunch of questions, only to mention :
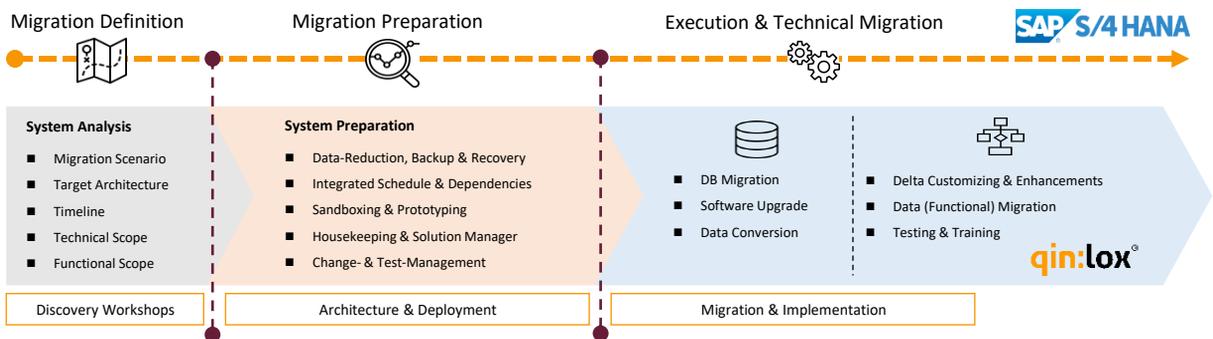
- What is the best transition approach: TM first or ERP first?
- How does my target architecture look like?
- Are there functional restrictions?
- How to integrate the systems?

Conversion from SAP TM

There is no doubt that an update from LE-TRA to S/4HANA TM is often associated with serious effort, as both solutions are based on a completely different data model and process scope. However, the situation is different for an existing SAP TM Business Suite. Here you are much more flexible regarding the switchover scenarios, because in addition to greenfield approach, different migration options are possible:

- Migration with implementation template (Greenfield)
- Completely productive migration (Brownfield)
- Mixed migration approach

The first migration option works more like a regular implementation project where mostly the organizational data will be taken over to the S/4HANA TM and the possible process improvements are the biggest. When speaking about the productive approach, this works close to a 1:1 conversion. In this case not only the organizational, transportation- or planning related data will be taken into the new system, but also the transactional data may be transferred over into SAP S/4HANA. The third approach combines the first two options and provides flexibility for an operational process improvement on the one hand, and the template for transfer and adjustment of current customizing settings on the other. The recommended approach depends on your specific business requirements, current system architecture and timeline.

| Migration Definition | Migration Preparation | Execution & Technical Migration | SAP S/4 HANA |

System Analysis	**System Preparation**	DB Migration	Delta Customizing & Enhancements
- Migration Scenario	- Data-Reduction, Backup & Recovery	- Software Upgrade	- Data (Functional) Migration
- Target Architecture	- Integrated Schedule & Dependencies	- Data Conversion	- Testing & Training
- Timeline	- Sandboxing & Prototyping		
- Technical Scope	- Housekeeping & Solution Manager		
- Functional Scope	- Change- & Test-Management		

| Discovery Workshops | Architecture & Deployment | Migration & Implementation |

There is a recommended best-practice with a phased approach to transition an existing LE-TRA or SAP TM to S/4HANA. As a first transition step – once the optimal migration and transition path have been defined – the new S/4HANA TM system will be setup, and existing custom-coding may be taken over to the new system and be adjusted to fit the new technical foundation. This typically happens in a Sandboxing & Prototyping environment. Once the system has been prepared the actual database migration, data conversion and necessary adjustment of existing customizing will be executed. In this context, existing configuration needs to be adapted – e.g., LE-TRA specific parameters such as: routes or shipment stages - to the TM S/4HANA objects transportation lanes, locations etc.

"Today companies are planning their digital journeys, transforming and digitalize existing or inventing new business models, material-, product- and information-flows, reengineering business processes across all logistic-channels to finally reimagine work. *From LE-TRA to SAP TM - Regardless of the current situation in your company, we are happy to guide you from the evaluation of the possible transition options through to implementation of the modern TM solution on S/4HANA.*"

QUALITY IN LOGISTICS

qin:lox®

Digitization of the supply chain, technical innovations, optimization of delivery dates, stocks, capacities and lead times, increasingly complex logistics against the background of industry specific processes and the challenges of seamless integration into existing or new systems?

DIGITAL SUPPLY CHAIN WITH SAP S/4HANA

From roadmap to transformation, from architecture, deployment and migration. We help our customers to leverage the full potential of the Digital-Supply-Chain and get the most out of their SAP investment in SAP S/4HANA. As supply chain experts we primarily focus on what we do best: The implementation, integration and optimization of Procurement, Distribution, Warehouse-Management, Production and Transportation.

WAREHOUSE MANAGEMENT

From small sites to large logistics centers, manual or highly automated, from simple to complex. Qinlox implements warehouse management based on SAP - locally, regionally and internationally. We are experts from the very beginning when it comes to implement SAP warehouse management solutions, leveraging the full potential of SAP EWM - de-central, as well as embedded into SAP S/4HANA.

TRANSPORTATIONN MANAGEMENT

Carrier collaboration, freight planning, simple and complex freight-agreements, tendering and precise freight cost calculation? The optimization and consolidation of freight plans for domestic, international, single, or multi-modal transportation, mixed pallet building, Addon-Developments, BOPF and system integration? We look forward to realize your SAP transportation requirements.

PRODUCTION SYSTEMS

Discrete-, Repetitive- or Process-Manufacturing? Enhanced and sophisticated internal supply chain strategies and Digital-Transformation? We are experts for production-systems based on SAP and offer a comprehensive service portfolio from strategic advice and evaluation to optimization, implementation and integration supporting our customers on their path to the digital transformation.

Qinlox was founded in 2017 by former employees of SAP SE and, as a young company, combines the many years of knowhow, industry expertise and excellence of proven SAP logistics experts, former SAP standard developers and SAP architects with many years of experience in the implementation and integration of logistics solutions based on SAP technology.

Warehouse logistics, transportation management, production-systems, material flow control, process- and system integration based on SAP. Industry specific processes, functions and system integration? Our expertise is based on the realization of logistics projects in different industries. With our comprehensive service portfolio, we help our customers to leverage the full potential of their SAP solution:

- Consulting & Implementation
- Warehouse Automation
- Technology & Development
- Training & Enablement
- Service & Support

"Industry specific processes, functions and system integration? We know the industry-specific processes and integration requirements, and are experts in harmonizing business processes, global and regional templates and corporate roll-outs and are experts for the implementation of SAP Transport Management. Based on SAP ERP, decentralized with SAP TM, as well as embedded in SAP S/4HANA and offer our customers a holistic Service-Portfolio to realize their specific requirements."

Denis Yuzhakov

Solution Principal | Transportation Management

Qinlox Consulting GmbH
Augustaanlage 37
68165 Mannheim | Germany

E-Mail: Info@qinlox.com

SAP Silver Partner

"As SAP Silver Partner and the spatial and personal proximity to Walldorf, we work closely and intensively with SAP, create value for our customers and deliver high-quality logistics consulting".