SAP Transportation Management 7.0 - Key Functionalities & Challenges

Applies to:

SAP Transportation Management – 7.0.

For more information, visit the [Business Process Expert homepage](#).

Summary

The current version of SAP TM 7.0 released in November 2008 offers profound business functionality and has been a considerable improvement over its previous release. This article focuses on covering some of the key functionalities offered in TM 7.0 with its business requirement along with the critical functionality that can be included in the future releases of TM in order to meet the industry requirements.

Authors: Sai Giridhar Kasturi, Ashutosh Mutsaddi.

Company: Intelligroup Inc.

Created on: 28 January 2009

Authors Bio

Sai Giridhar is an SAP Certified solution consultant in mySAP Supply Chain Management – Order Fulfillment (ver.4.7) and has over 4 years of work experience which includes over 2 years in SAP Sales & Distribution Module. He is working with Intelligroup Asia and is a Post Graduate in Business Administration with specialization in International Business Management and Marketing.

Ashutosh Mutsaddi is the Competency Lead, SAP Transportation Management and a Certified Project Manager with Intelligroup. He has over 10 years of experience in leading and managing supply chain projects worldwide, in various industry verticals.

Table of Contents

Introduction

Transportation Management is a comprehensive solution offered by SAP to handle the physical transportation activities of a business. It is an application solely developed with an aim to target the Logistics Service Provider Market. Though the application is an LSP centric solution, it equally favors the existing ERP customers to handle their transportation activities in a much more flexible and sophisticated manner than what an R/3 application could offer.

SAP TM can be integrated with an ERP application or any legacy system using an XI platform and is an all-inclusive solution that can handle both buying and selling aspects of a business simultaneously. It is a complete standalone system decoupled from its ERP solution and is based on service-oriented architecture that supports all the logistics activities such as –

- Freight Management

- Planning & Execution

- Sub-contracting & Tendering

- Transportation Charge Management

Key Functionality Offered in TM 7.0

It has been a significant strategic move from SAP to re-architect the existing Transportation Planning and Vehicle Scheduling (TPVS 5.1) solution over to an SOA platform and make TM 6.0 an extensive Transportation Management solution, which was first released in November 2007. The current version of SAP TM 7.0 released in November 2008 offers profound business functionality and has been a considerable improvement over its previous release. This article focuses on covering some of the key functionalities offered in TM 7.0 in concert with its business requirement along with the critical functionality that can be included in TM in the future releases to meet the industry requirements.

Mode Specific Order Management

Transportation activities pertaining to a mode of transport such as Road, Rail, Air & Sea, function on their own norms. The statutory requirements and the documents necessary for transporting goods via Road would be different from Rail, Sea or Air. Therefore, the new release of SAP TM has provided order entry screens (i.e. Creating Shipment Request) specific for each mode of transport separately.

Though the earlier version of TM supported the multiple modes of transport, it did not carry specific order entry screens depending on the mode of transport. The mode specific order entry screens in a shipment request help the user to maintain the most relevant data that is required for the specific business circumstances.

Integration to External Ratings Engines (SMC3, LTL) i.e. Consider LTL Rates During Planning

Less-Than-Truckload (LTL) shipping is a transportation activity, involving relatively small freight when compared to its alternatives such as parcel carriers or full truckload carriers. LTL carriers collect freight from various shippers and consolidate them before delivering the same to a terminal or a hub. The main advantage of using an LTL carrier is that the shipment can be transported to its destination for a fraction of the cost when compared to hiring an entire truck for an exclusive shipment.

There are thousands of LTL carriers available in the market serving the shippers with their own pricing systems in place which are complex and maintaining all those prices in the TM system would be an unreasonable task. Therefore, the new release has been integrated with an external rating engine (North American LTL rate content provider – SMC3) that provides access to thousands of carrier tariffs simplifying the application.

GTS Integration for Export Compliance

SAP Global Trade Services (GTS) application relates to automation of global trade processes for the companies involved in foreign trade helping them to comply with the challenges of international business and changing legal regulations. It is equipped with tools such as compliance management, customs management and risk management that help to respond to the rules and regulations of foreign governments and customs authorities more effectively and avoid costly delays in import and export processes. GTS helps to react quickly to global business opportunities while considering the involved financial risks.

Most of the companies drawn into Transportation business are engaged in International trade transporting goods across various countries in tandem. Therefore, GTS has been integrated with TM application for Export Compliance (Shipper Scenario) with this new release, to make the product more responsive for Logistics service market. In addition to other available functionalities, TM 7.0 has the ability to trigger export declarations and consider customs status while executing shipments (for example, only shipment documents with 'released' status qualify for execution).

SAP GRC Global Trade Services allows to automatically handle customs approval status checking for shipments created in SAP Transportation Management (SAP TM) by the ERP system

Inter/Intra Company Cost & Revenue Distribution

The basic purpose of Inter/Intra Company cost and revenue distribution is to settle internal costs or share profits between subsidiaries of same or different legal entities in a transportation business. For example, a sales organization responsible for a shipment request bills the shipper (customer), while the purchasing organization that is involved in transporting the goods of the same SRQ pays the carrier. In this scenario, the responsible sales and purchasing organizations' share the internal cost incurred in transportation of goods and profit earned for that particular transaction.

This functionality introduced in TM 7.0 requires maintenance of master data objects such as internal freight agreement, tariff, TCCS and rates. The process of internal charging between sales and purchasing organizations' is carried out by creation of internal customer freight invoice request (CFIR). In case, if the sales and purchasing org units belong to the same legal entity (intra-company), settlement of costs/profits will be done by posting between internal controlling orders in ERP. On the other hand, if the sales and purchasing org units belong to different legal entities (Inter-company), then an invoice is generated in ERP by the purchasing organization in the name of sales org that has requested for the shipment.

Multi-Resource

Resources play a critical role in planning and executing the transportation activities in TM. As a standard practice, a resource master is created for each resource on hand with details of its availability, capacity and the relevant means of transport. In most cases, companies involved in transportation business, acquire resources of the same type such as 50 trucks with a capacity of 10 tons. Until TM 6.0, this particular scenario required maintenance of 50 individual resource master records, which is quite a bit of effort.

The concept of Multiresource introduced in TM 7.0 allows the companies to identify the resources of same type in a single step. It enables the customer to maintain only one resource master specifying the number of identical resources available for a particular means of transport.

Workflow

Workflow is a tool designed to facilitate and automate business process eluding the manual intervention. It allows to monitor and administer various business practices through approval process and trigger certain events automatically. Further, it can also act as an alert tool by notifying or reminding the required actionable to the concerned person.

TM 7.0 facilitates the workflow concept for business objects such as transportation requests or orders based on entities such as customer, delivery date, weight, product etc. For example, a shipment request which exceeds a specific capacity or delivery date can be blocked for approval by a particular authority such as manager who gets an email in his SAP TM business workplace inbox for "Acceptance" or "Rejection". TM can be connected to standard workflow using Event management or can be triggered directly from the TM system either automatically or manually.

RFID Technology

Transportation management costs will be slashed by making the business process more flexible and dynamic using new technologies such as RFID. Using RFID (Radio Frequency Identification) technology, companies can track loaded and empty vehicle resources (i.e. trucks, railcars etc) to ensure timely delivery of goods and the return of equipments to the shipping location.

For example, within a rail transportation business, railcars maybe removed and replaced with other railcars at a rail yard, depending on the route and destination of the shipment. In other words, the actual composition of a train changes as it enters and leaves a rail yard. This highlights the necessity of tracking and identifying each railcar in transit as individual railcar in a train will have different source and destination locations. RFID technology can be integrated with TM using SAP's Net weaver platform.

Graphical Document Flow

The basic business requirement of any software solution is to have visibility and access to all relevant documents that are applicable to a business transaction from different entry points. An interconnection between the preceding and subsequent documents, allows the user to track and trace all the associated documents that are pertinent to a transaction.

Document flow is a critical business functionality that displays the inter-linkages of an end-to-end business process. This vital functionality that was absent in the previous version, has been introduced in the latest release, which allows the transaction flow across the sub process of TM such as order management, planning, subcontracting and execution to be seen either as a list or in a graphical manner.

Customer Fact Sheet

Maintenance of Customer information plays a crucial role for any kind of business, and Transportation industry stands no exception to that. Representatives directly interacting with clients require quick access to customer information such as contact persons, pickup/delivery locations, available times etc, in addition to the historical transactional data such as existing freight requests, freight agreements, invoices etc with an analytical outlook. This information allows the companies to respond to the customers' requirement more effectively.

To facilitate this, a single snapshot of all key statistics and information about a customer, a new Customer Fact Sheet has been introduced in this version of TM 7.0. The customer fact sheet is used to display address, contact and related Transportation Management information to a specific customer. The personal object worklist integrated with the customer fact sheet includes Shipment Request, Quotation, Supplier Freight Invoice Request, Customer Freight Invoice Request and Freight Agreements.

Key challenges for TM Future Releases

The following business process requirements and scenarios are not addressed by the new version of SAP TM. In the coming months, the following will be the point of focus of next versions -

Order Based Planning

The existing TM system offers ERP integration through Delivery/Shipment documents. In most cases, the delivery/shipment documents are created, close to the delivery dead line. This does not give the transportation planner sufficient time to re-plan any shipments if required under any business circumstances.

Integration of sales orders, purchase orders and stock transport orders from ERP to TM has not been established in the existing versions. This feature in the upcoming releases would facilitate advanced planning at the time of saving an order and would also allow the planner to re-plan any shipments if required.

Global ATP

In modern day business environment, Companies rely on multiple manufacturing and distribution centers around the world to supply the required goods to customers. This kind of business environment demands a software system that can quickly and easily identify the appropriate and best accessible location to deliver the product within the binding delivery period.

The concept of Global ATP provides an answer to handle the above situation during sales order processing. It allows to check the available stocks of the required material for some or all of possible delivery plants globally and select the appropriate delivery plant to fulfill the requirement. This feature, which is currently available in the SAP APO system, can add value to the TM system if included and make the shipper business scenario more influential. Global ATP engine (GATP) would help to tie back the stock availability dates in TM and ERP.

Railcar Management

Railroad transportation is as a critical mode of transport for most of the shipping businesses in the industry. The significance of rail transportation activities proves the prominence of railcar management functionality that has to be included in any transportation management system providing services such as freight origination, storage and maintenance of goods, maintenance of railcars, railcar storage etc.

SAP Railcar Management, which is currently a component of SAP SCM, provides comprehensive functionality to increase fleet utilization and enhance supply chain operations such as timely and cost effective delivery of products and prompt equipment return etc. Though SAP TM supports railroad as a mode of transport, the complex functionality of railcar management is not yet supported by the solution.

Related Content

SAP Transportation Management - SAP TM 7.0 - Delta Presentation
https://websmp208.sap-ag.de/~sapidb/011000358700001752532008E/

SAP Transportation Management 7.0 – Overview
https://websmp208.sap-ag.de/~sapidb/011000358700001752522008E/

Transportation Management in Business Network Transformation
https://www.sdn.sap.com/irj/sdn/go/portal/prtroot/docs/library/uuid/10a58e36-fdcb-2a10-c49a-f96cf61894a5

SAP® Transportation Management Solution - *Supply Chain Management with mySAP.com* http://www.e-optimization.com/resources/uploads/ACF397.pdf

Global Operational Excellence With SAP Transportation Management – The Next Generation In Transportation Management Software
http://download.sap.com/download.epd?context=9ABB34DAB4759681EA8CFF5799D1A825DF318EDFD8F9FB79F0916410FC7C55D87634EAA67403738196548620B91414C3AEE5860D5C110B6C

For more information, visit the Business Process Expert homepage.

Disclaimer and Liability Notice

This document may discuss sample coding or other information that does not include SAP official interfaces and therefore is not supported by SAP. Changes made based on this information are not supported and can be overwritten during an upgrade.

SAP will not be held liable for any damages caused by using or misusing the information, code or methods suggested in this document, and anyone using these methods does so at his/her own risk.

SAP offers no guarantees and assumes no responsibility or liability of any type with respect to the content of this technical article or code sample, including any liability resulting from incompatibility between the content within this document and the materials and services offered by SAP. You agree that you will not hold, or seek to hold, SAP responsible or liable with respect to the content of this document.