

Reduce your EXPOSURE to inventory write offs using SAP SCM

Purpose of this article is to give an overview of the shelf life functionalities offered by SAP SCM module. While the knowledge of SAP SCM functionality and/or basics of Supply Chain planning process /operational planning is required to completely understand such topics, our team has made every efforts possible to make this article as simple as possible for our readers to understand the concept of it.



Supply Chain Challenge

Certain industries (Consumer Packaged Goods, Food and Processing, Pharmaceutical, etc) have been struggling to take preventive measures to minimize the production / distribution / planning of the inventory of their Finished Goods and/or raw materials which has a very short life span (so called "Shelf life"). As a result, these companies has to write off millions of dollars of inventory just because portion of their goods already expires before it reaches to the end consumer !

Objective: Reduction of Waste and Disposal Cost

- Higher complexity: more products, more restrictions
- Regulations: Increasing requirements on Food Safety Compliance
- Increasing pressure from retailers:

- Obtain products with a longer remaining shelf life
- Obtain products with a remaining shelf life that is longer than that of the previous delivery
- Entry into new markets:
 - Fresh Dairy
 - Fresh Food
 - Fresh Seafood

Value addition of SAP SCM shelf life functionalities

- Enable manufacturers to consider shelf life in the distribution of perishable goods such as food or pharmaceutical products
- Offer companies the possibility to consider shelf life issues with regard to specific products or demands in the supply chain
- Enable planners to ensure that products have a certain shelf life at their demand date
- Enable planners to visualize and alert on shelf life data across the supply chain
- Enable planners to react to expiring goods by e.g. initiating campaigns

Shelf life in SAP SCM - SNP (Supply Network Planning)

- Display of shelf life data
 - Display shelf life data of demands, receipts and stocks
 - Display of data on expiring/wasted goods and shelf life based stock balance
- Propagate shelf life data
 - Propagate shelf life data of demands (for example: customer orders) across the supply chain
- Alert on shelf life data
 - Generate alerts for goods that will expire or for shelf life mismatches between demands and stocks
- Integrate shelf life data to ERP
 - Integrate shelf life data of purchase requisition to ERP
 - Use shelf life data for further processes in ERP (purchase order, batch determination for delivery creation)

SAP ECC master data / Terminology for Shelf life

The following shelf life fields exist in the material master of ERP (transaction MM03, tab *Plant Data / Stor. 1*):

- Minimum Remaining Shelf Life
 - Minimum amount of time for which the material must keep upon goods receipt for the goods receipt to be accepted by the system.

- Total Shelf Life
 - Period for which the material will keep in total, that is from the date of production to the shelf life expiration date.
- Period Indicator for Shelf Life
 - Determines the time unit of the above fields.
- Rounding Rule for Shelf Life
 - Expires material at the start or end of the period.
- Storage Percentage
 - How much of the minimum remaining shelf life must be left if the material is to be sent from one plant to another.

SAP SCM master data / Terminology for Shelf life

The following shelf life fields exist in the product master of SCM (transaction /SAPAPO/MAT1, tab *Properties*):

- Planning with Shelf Life
 - This flag determines whether shelf life functionality is considered for this product. Set by CIF if a value is maintained in field "Total Shelf Life" of ERP.
- Shelf Life
 - Filled via CIF from field "Total Shelf Life" of ERP. Value is always in days.
- Maturation Time
 - Required period between production of the material and its use. Currently not filled via CIF. Value is always in days.
- Required Minimum Shelf Life
 - Minimum shelf life a stock/receipt element must have to cover a demand.
 - Filled via CIF from field "Minimum Remaining Shelf Life" of ERP. Value is always in days.
- Required Maximum Shelf Life
 - Maximum shelf life a stock/receipt element must have to cover a demand.
 - Currently not filled via CIF. Value is always in days.
- Rounding Rule
 - Filled via CIF from fields "Rounding Rule for Shelf Life" and "Period Indicator for Shelf Life" of ERP.
- Percentage Remaining Shelf Life
 - Filled via CIF from field "Storage Percentage" of ERP.

Stocks and Batch information

- Stocks in ERP can carry shelf life data by assigning batches. (This is only possible if flag "Batch Management" is set in the material master.)

- A *batch* is a quantity of the material with certain properties (such as expiration/shelf life date, etc) that is held in stock separated from the other quantities of the material.
- The batch contains the date of manufacture, the shelf life expiration date and the 'available from' date (day after end of maturation time).
- These attributes can be entered manually. If the shelf life expiration date is missing it is calculated from the date of manufacture and the total shelf life from master data.

Basic data 1 Basic data 2 Classification Material data Changes

Expiration Date

Date of Manufacture	10.01.2007
Shelf Life Exp. Date	31.03.2007
Available From	19.01.2007
Period Indicator	D

Miscellaneous

Next Inspection		<input type="checkbox"/> Batch Deletion Flag
Phys. Inv. Block	<input type="checkbox"/>	<input type="checkbox"/> Batch Deletion Flag at a Plant
		<input type="checkbox"/> Deletion Flag Batch Stock

Trading Data

Vendor		Ctry of origin	
Vendor Batch		Reg. of origin	
Last Goods Receipt	19.01.2007	Exp/imp group	

To transfer shelf life data of stocks to SCM the relevant classes, characteristics and batches have to be included in the integration model.

In SCM, shelf life of stocks can be displayed in /SAPAPO/RRP3.

Avail/ReqD	Avail/ReqT	Category	Receipt/Requirements Element	Rec/ReqQty	BUn	Category Long Text	Version	SL Date 2	SL Time 2
12.06.2007	09:27:10	Stock	SH_BATCH12/0001/CC/(01.01.1970)	201	ST	Valuated, unrestricted-use stock	SH_BATCH12		
01.03.2007	00:00:00	Stock	SH_BATCH9/0001/CC	500	ST	Valuated, unrestricted-use stock	SH_BATCH9	01.03.2008	00:00:00
01.03.2007	00:00:00	Stock	SH_BATCH11/0001/CC	100	ST	Valuated, unrestricted-use stock	SH_BATCH11	06.04.2007	01:00:00
01.03.2007	00:00:00	Stock	SH_BATCH8/0001/CC	300	ST	Valuated, unrestricted-use stock	SH_BATCH8	30.04.2007	01:00:00

Display/Reporting of Shelf life information in SAP SCM

- Use planning book in SNP interactive planning to display shelf life data
- Macro-based display & alerting solution
 - Display of shelf life based stock balance

- Display of projected wastage quantities, "How much of the product has to be disposed based on the current plan?"
 - Raise alerts if the receipts and demands do not match with regard to their shelf life data.
- Data on expiring/wasted goods and the shelf life based stock balance per location product are displayed in new key figures of the planning table
- Data for individual orders (maturation date, expiration date, minimum / maximum required shelf life date) can be displayed in the detail view
- The system uses macros to calculate the following key figures that contain shelf life information:
 - Expiring Quantity- Displays the total quantity of stock or receipt elements in a bucket that are no longer usable from this bucket on.
 - Projected Wastage Quantity- Displays the portion in key figure "Expiration Quantity" that needs to be discarded in the current demand situation (un-pegged supply).
 - Stock on Hand (Shelf Life)- Displays the total quantity of stock or receipt elements in a bucket that have not been consumed by demand up to, and including this bucket. Consumption follows the shelf life logic that stock or receipt elements must meet the shelf life requirements of demand.
 - Supply Shortage (Shelf Life)- Displays the total quantity of demand elements in a bucket that have not consumed stock or receipt elements up to, and including this bucket. Consumption follows the shelf life logic that stock or receipt elements must meet the shelf life requirements of demand.

For this familiar with inventory planning functions, snapshot below gives a good synopsis about the shelf life planning using SAP SCM.

- Batch of 500, expires in Month 7
- Minimum Shelf life required is ≥ 3 months

		M1	M2	M3	M4	M5	M6	M7
Forecast		10	10	10	10	10	10	10
Inventory	500	490	480	470	460	0	0	0
Stop Sale Qty					460			
Expiring Qty								500
Projected Wastage Qty								460

3 Month Minimum

Although, end-to-end implementation of SAP SCM shelf life functionalities (We mean here is an integration of the SAP SCM shelf life planning solution with SAP ECC execution side) has some limitations, these limitations can be overcome by creative design that leverages SAP SCM.

Please contact us at <http://www.teknokret.com> if you are interested to learn more or looking for supply chain solution in this or other areas.