

# SAP Global Batch Traceability

## What is it and what can it do for you?

*April 15, 2016*



Industries that have a requirement to track their product movements via batches, whether it is legislated or based on a need for mature supply chain economics, find it difficult to perform these tasks in an efficient manner.

## Why the inefficiency?

1. They battle to track batches, serial numbers or handling units / packages across the various **disparate systems** that are involved in the supply chain. Multiple systems come in to play and generally any solutions that may be available to provide for the tracking of these objects are bound to one system and one system only.
2. They have no easy way to view the upstream products, suppliers and customers impacted by a defective batch (bottom up view). In the same breath there is no view in to products, raw materials, orders that fed in to that same defective batch (top down view). Finding a defective product at a customer or on the shelf requires a combination of top down and bottom up analysis to determine the breadth of the issue. The **complete genealogy**, for both upstream and downstream impacted batches and objects, simply cannot be easily determined and reported on. This task can often take many weeks to complete. If the defective batch led to bad press, sickness or at worst a fatality, the timeliness of determining the root cause to mitigate the impact is business critical.
3. **Inconsistent, inaccurate or missing data** in the product genealogy leads to an incomplete analysis being performed and often is very difficult even to determine that the chain has not actually ended but is actually continued elsewhere.

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*Time To Insight (T21) – How long would it take you to report on the exact delivery locations of all batches that were in some way impacted by a bad raw material?*

*How long would it take to report on all batches and raw materials that ultimately fed in to a finished product that turned out to have gone bad?*

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## So where does SAP Global Batch Traceability (GBT) fit in to the picture?

### SAP GBT is **not**:

- A batch management solution – You still need to perform proper batch management in your ERP system by flagging materials and process as batch relevant and capturing the proper batch information as the goods movements are executed.
- A replacement for a poor system with poor data. Garbage in – Garbage out... All movements related to batches need to be executed correctly in the system in order to reflect a complete and correct genealogy for the respective batches

### SAP GBT **is**:

- An add-on tool provided by SAP to give companies immediate insight in to your product batch genealogy
- A tool that allows for fast and efficient analysis and reporting on product batch or multiple batch distribution records. I.e. where these affected products were sent?
- A repository of batch related objects and relationships between these objects

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*SAP GBT – Giving immediate insight in to a product batch genealogy.*

*Provides 1 click top-down and bottom-up analysis of batch genealogy*

*Provides the mechanism to automatically report on where affected products were sent or received from.*

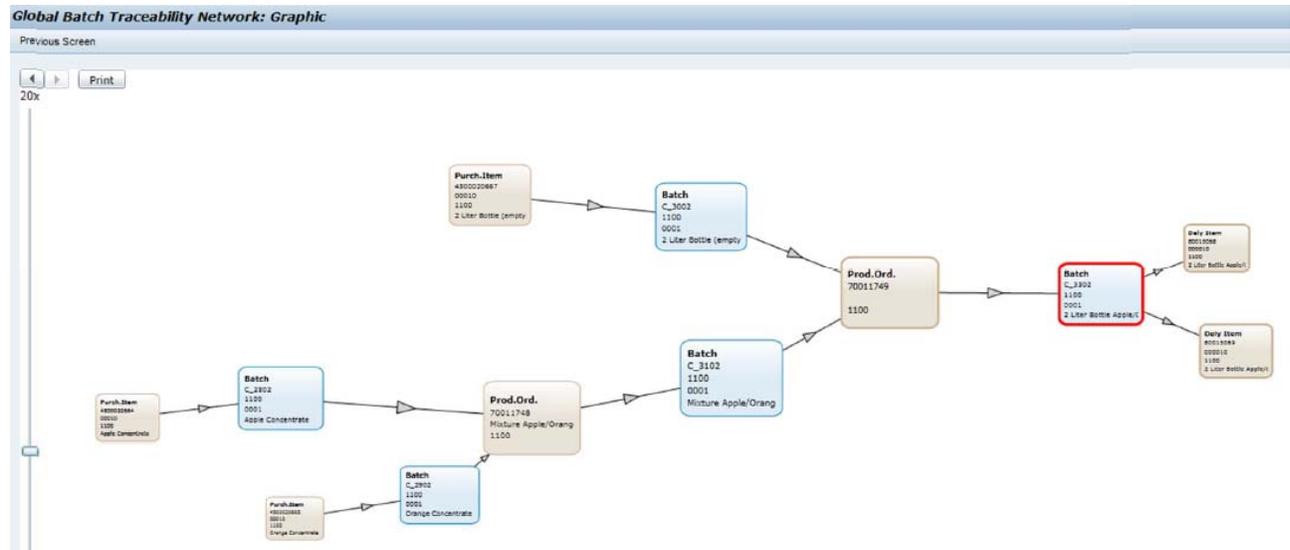
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## How does it work, practically speaking?

If I take a simple process and walk it through with you, we can see how it works in practice. The first scenario is one where we uncover an issue at the end-customer side:

STEP 1: We have a problem with this product.

STEP 2: Find all the applicable batches that fed in to this product (Top down report).



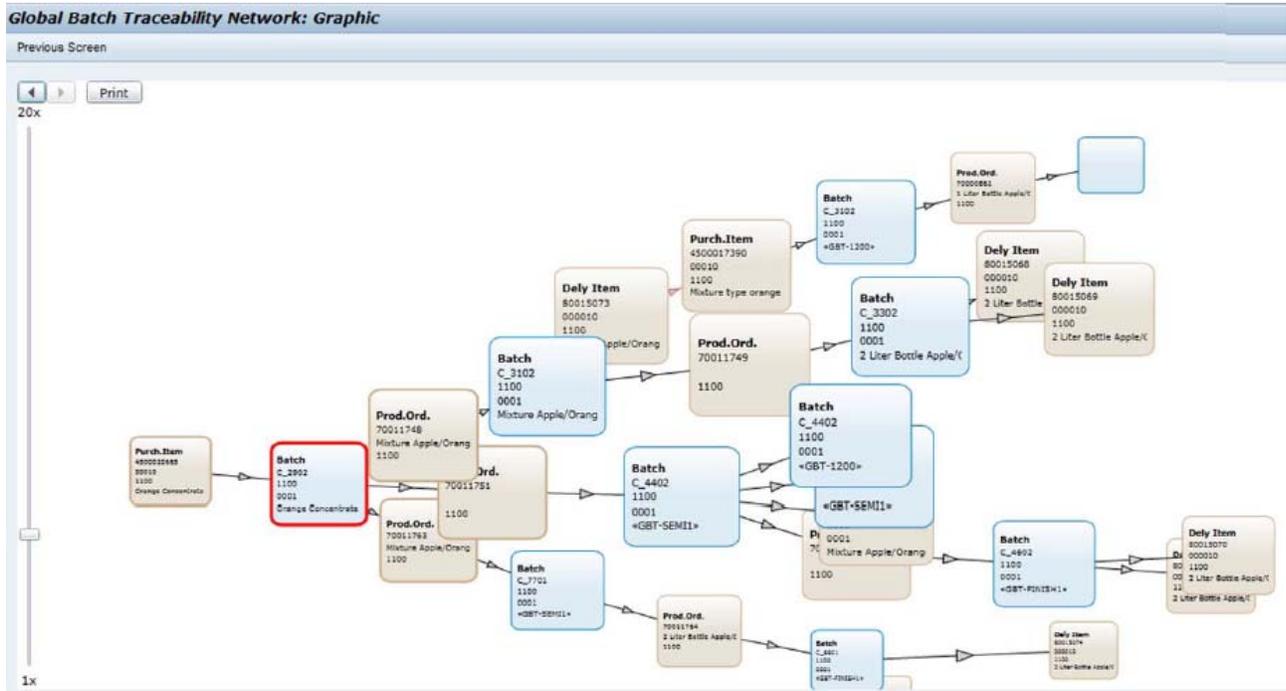
STEP 3: Isolate the bad batch or raw material at the lowest level.

STEP 4: List all batches / semi-finished / finished product that used this bad batch together with the locations (addresses) of each of these products (bottom up report).

STEP 5: Take action! Send out a notice of recall, withdrawal or hold.

A second scenario might be if you uncover an issue with a raw material that you used in producing a product that you have now shipped:

STEP 1: We uncover a problem with this raw material batch.



STEP 2: List all batches / semi-finished / finished product that used this bad batch together with the locations (addresses) of each of these products (bottom up report).

**Distribution List**

Start Batches

Batch ID	Material Number	Material Description	Plant	Logical System
C_2902	GBT-RAW2	Orange Concentrate	1100	04ACLNT023

Mat. No.	Material Description	FW/Node	M/Node/Type	Actual Gr Date	Logical System	Plant	Inst/Gr Loc	Delivery	Del. Qty	Unit	508-As	Ship-To	Goods Recipient	Goods Rcpt Address
GBT-RAW2	Orange Concentrate	C_2902	Batch		04ACLNT023	1100								
GBT-FINSH1	2 Liter Bottle AppleOrange Fruit Drink	C_8891	Batch	07.03.2012	04ACLNT023	1100	0001	80015075	20	KG	4000	4000	North Energy Ltd	/ Calgary AB T2P 4K9
GBT-FINSH1	2 Liter Bottle AppleOrange Fruit Drink	C_8891	Batch	07.03.2012	04ACLNT023	1100	0001	80015074	20	KG	3000	3000	Thomas Bush Inc.	11 2800 South 25th Ave / MAYWOOD L 6E1S3
GBT-FINSH1	2 Liter Bottle AppleOrange Fruit Drink	C_4902	Batch	01.03.2012	04ACLNT023	1100	0001	80015079	20	KG	3000	3000	Thomas Bush Inc.	11 2800 South 25th Ave / MAYWOOD L 6E1S3
GBT-FINSH1	2 Liter Bottle AppleOrange Fruit Drink	C_4902	Batch	01.03.2012	04ACLNT023	1100	0001	80015071	2	KG	4000	4000	North Energy Ltd	/ Calgary AB T2P 4K9
GBT-FINSH1	2 Liter Bottle AppleOrange Fruit Drink	C_3302	Batch	01.03.2012	04ACLNT023	1100	0001	80015085	10	KG	3000	3000	Thomas Bush Inc.	11 2800 South 25th Ave / MAYWOOD L 6E1S3
GBT-FINSH1	2 Liter Bottle AppleOrange Fruit Drink	C_3302	Batch	01.03.2012	04ACLNT023	1100	0001	80015089	20	KG	4000	4000	North Energy Ltd	/ Calgary AB T2P 4K9

STEP 3: Take action! Send out a notice of recall, withdrawal or hold.

## Why do you need to react quickly to these types of issues?

*What value lies in it for you?*

Greatly improved Time to Insight (T2I) gives you more time to take corrective action because you are aware of the full extent of the issue much earlier on in the process. This allows you to following benefits:

### Customer protection

Stop those customers from consuming the product if they have not already done so. You have the ability to limit the impact to your customer base by quickly addressing communication directly to each customer who received the affected product

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***Customer protection***

Consumer health

***Corporate liability***

Precise action

***Brand protection***

Brand trustworthiness

***Financial liability***

### Brand protection

Following from customer protection is naturally brand protection. The fallout to a company that does not quickly limit the exposure of a bad product to their customer base could face a very real threat of losing credibility in the industry and thus lose market share and business.

### Contain corporate liability

By taking early, efficient and effective action to address the issue, you have done all that you could possibly do to contain the issue, thus minimizing any potential fallout relating to the issue.

***Corporate compliance***

Comply to industry regulations

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### Financial Exposure

Similarly to the previous point, by taking fast corrective action you can limit number of affective parties and show that you did everything possible to address the situation in a timely fashion. Of course this does not absolve you from accountability and financial action but it does contain and limit actions that could have been brought against you had you reacted slower and the problem had been more widespread.

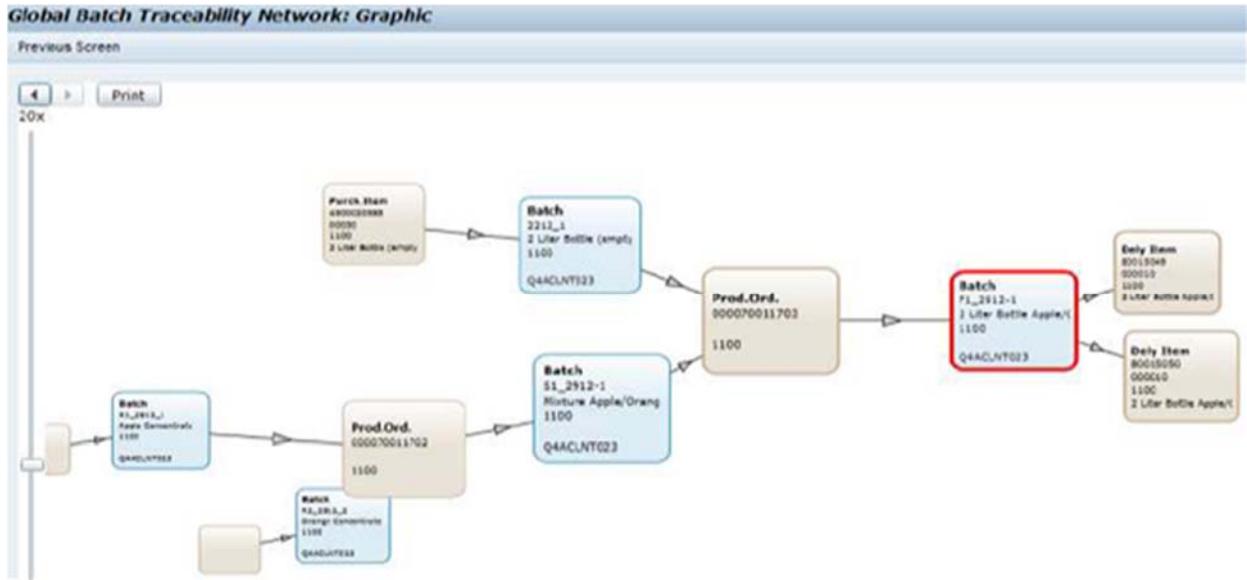
### Regulatory report

Some industries are regulated and are thus required to be able to report in a very timely fashion exactly where certain products have been sent or from where they were received.

## What functionality components are available in SAP GBT?

The following is a list of functions that you can perform using GBT if you have it set up as your global batch repository.

1. A web User Interface (UI) to allow for the easy searching for batches based on various attributes
2. A neat graphical UI that allows you to easily explore your product genealogy



3. A top-down where used list (web enabled ALV report)

**Global Batch Traceability Network: Top-Down**

Previous Screen

Levels | Display Network | Display Connecting Business Documents

Top-Down	Material Number	Material Description	Plant	Logical System	Event Quantity	UoM for Event Quantity	Batch Number
▼ F1_2912-1	GBT-FINSH1	2 Liter Bottle Apple/Orange Fruit Drink	1100	Q4ACLNT023	0,000		F1_2912-1
▼ 000070011703 / 2011			1100	Q4ACLNT023	20,000	KG	
▼ 2212_1	GBT-PACK1	2 Liter Bottle (empty)	1100	Q4ACLNT023	10,000	PC	2212_1
• 4500020588 / 2011 / 00230	GBT-PACK1	2 Liter Bottle (empty)	1100	Q4ACLNT023	30,666,000	PC	
▼ S1_2912-1	GBT-SEMI1	Mixture Apple/Orange Type A	1100	Q4ACLNT023	10,000	KG	S1_2912-1
▼ 000070011702 / 2011			1100	Q4ACLNT023	20,000	KG	
▼ R2_2912_2	GBT-RAW2	Orange Concentrate	1100	Q4ACLNT023	10,000	KG	R2_2912_2
• 4500020614 / 2011 / 00010	GBT-RAW2	Orange Concentrate	1100	Q4ACLNT023	20,000,000	KG	
▼ R1_2912_1	GBT-RAW1	Apple Concentrate	1100	Q4ACLNT023	10,000	KG	R1_2912_1
• 4500020613 / 2011 / 00010	GBT-RAW1	Apple Concentrate	1100	Q4ACLNT023	20,000,000	KG	

- A bottom-up where used list (web enabled ALV report)

**Global Batch Traceability Network: Bottom-Up**

Previous Screen

Levels | Display Network | Display Connecting Business Documents

Bottom-Up	Material Number	Material Description	Plant	Logical System	Event Quantity	UoM for Event Quantity	Batch Number
F1_2912-1	GBT-FINISH1	2 Liter Bottle Apple/Orange Fruit Drink	1100	Q4ACLNT023	0,000		F1_2912-1
• 0080015049 / 2011 / 000010	GBT-FINISH1	2 Liter Bottle Apple/Orange Fruit Drink	1100	Q4ACLNT023	6,000	KG	
• 0080015050 / 2011 / 000010	GBT-FINISH1	2 Liter Bottle Apple/Orange Fruit Drink	1100	Q4ACLNT023	8,000	KG	

- GBT gives you the ability to easily report on the repository data and making those reports available to you via a 1 click option. The example below shows a standard SAP delivered report showing the physical addresses of the goods receipts for a selected batch (or batches).

**Distribution List**

Menu | Back | Cancel | Exit | System | Sort in Ascending Order | Sort in Descending Order | Set Filter | Local File... | Change Layout... | Select Layout... | Save Layout...

**Start Batches**

Batch ID	Material Number	Material Description
F1_2912-1	GBT-FINISH1	2 Liter Bottle Apple/Orange Fruit Drink

Mat. No.	Material Description	NW Node	NWNodeType	Actual GI Date	Plant	IniStgeLoc	Delivery	Del Qty	Unit	Sold-to	Ship-to	Goods Recipient	Goods Rcpt Address
GBT-FINISH1	2 Liter Botte Apple/Orange Fruit Drnk	F1_2912-1	Batch										
GBT-FINISH1	2 Liter Botte Apple/Orange Fruit Drnk	F1_2912-1	Batch	30.12.2011	1100	0001	80015049	3	KG	3000	3000	Thomas Bush Inc.	1 1 2800 South 25th Ave
GBT-FINISH1	2 Liter Botte Apple/Orange Fruit Drnk	F1_2912-1	Batch	30.12.2011	1100	0001	80015050	4	KG	4000	4000	North Energy Ltd	/ Calgary AB T2P 4K9

- The ability to maintain broken links in the genealogy tree is available. The diagram below shows a list of all batch relevant materials that were received without being assigned to a purchase order. Naturally this implies that there is a possibility that a link in the product genealogy is broken. Someone needs to review these documents and either creates the link manually, have the original Goods Receipt adjusted to reference the correct PO or flagged as not relevant stating the reason.

**Search: Network Nodes with Missing Events**

Save | Cancel | Edit

Saved Searches: [ ]

Search Criteria

Material Number is [ ]

Plant is [ ]

Logical System is [ ]

Identified On is [ ]

Add Criteria To Exclude

Maximum Number of Results: 100

Search | Clear Entries | Reset to Default

Save Search As: [ ]

**Result List: 15 Network Nodes With Missing Events**

Network Node...	Network Node...	Initial/Target...	Not Relev...	Plant	Material Num...	Material Desc...	Logical S...	Identified ...	Identified ...	Changed ...	Changed ...	Changed ...
MDI / 4900000...	Goods Receipt...	Target Netw...	<input type="checkbox"/>	1100	AI-1202	Orange Conce...	Q4ACLNT...	14.02.2012	11:17:05	15.02.2012	10:17:13	
MDI / 4900000...	Goods Receipt...	Target Netw...	<input type="checkbox"/>	1100	AI-1202	Orange Conce...	Q4ACLNT...	22.02.2012	10:17:51	22.02.2012	11:17:52	
MDI / 4900000...	Goods Receipt...	Target Netw...	<input checked="" type="checkbox"/>	0001	AI-1201	Apple Concent...	Q4ACLNT...	30.01.2012	13:40:45	30.01.2012	14:18:22	HUBERCHRO
MDI / 4900000...	Goods Receipt...	Target Netw...	<input type="checkbox"/>	1100	AI-1202	Orange Conce...	Q4ACLNT...	22.02.2012	10:17:51	22.02.2012	11:17:52	
MDI / 4900000...	Goods Receipt...	Target Netw...	<input type="checkbox"/>	1100	AI-1202	Orange Conce...	Q4ACLNT...	22.02.2012	10:17:51	22.02.2012	11:17:52	

7. The ability to select multiple batches and report on them in a single run is also possible.
8. The ability to pull data in to GBT from multiple systems is possible. Standard integration exists in to SAP ERP but the use of web services (typically) would be required to integrate a third party batch management system into GBT.

To conclude, let me address the last question that might be on your lips. *I have this available in ECC, why do I need GBT?*

ECC most certainly has a tree view report to do bottom up and top down analysis, but unfortunately, that's where the features and functionality ends. ECC does not offer the following features:

- graphical view of the product genealogy
- the ability to analyze information across systems. It's limited to the ECC system on which it is run.
- the ECC solution cannot consider non-SAP solutions in its report.
- ECC has no consideration for serial numbers or handling units.
- In addition, it does not consider non-tracked objects like pallets.
- ECC cannot analyze multiple tracked objects in one run making it far more time intensive to conduct your analysis.
- ECC has no way to "fix" broken connections in your batch genealogy chain.
- ECC provides no report showing where the products related to the batch were delivered.
- ECC is not optimized for fast searching.

## About the Author



**Kevin Wilson** is an Associate Partner in charge of the SAP Supply Chain Extended Solutions practice and Sr. Solution Engineer at Reveal. With a primary focus of facilitating solutions for companies experiencing SAP process and technical integration pains. His solutions cover the various applicable toolsets provided by SAP to accomplish real value, whether it is SAP Workflow, SAP NetWeaver PI, EDI, ALE, ABAP, OER, All, eWM, SNC, GBT or SAP Event Management. Since he started with SAP in 1996, he has utilized these skill sets to help many companies achieve value through the use of mature solution adoption.

He is very actively involved in the supply chain community, speaking regularly at user group meetings and conferences on various supply chain topics. He regularly gives webinars and training sessions to users on all topics in his area of expertise, including SAP Event Management, GBT, Workflow, EDI, ABAP, XI BPM and ALE.

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