

# SCOR to store

A first look at the new metrics for supply chain performance within retail stores.

by Peter Bolstorff

As with many of you, I have two categories of retail experience. As an employee, I spent three years as a part-time stocking clerk and sales associate in an *Our Own Hardware* franchise store. So tasks like unloading trucks, pricing merchandise and stocking shelves, verifying receipts, staging promotions, running the cash register (and having to call the manager to fix your user error), taking inventory (and checking it twice), assembling point-of-sale displays (barbecue grills were the worst), helping customers with advice and locating merchandise (looking intelligent while using trial & error search strategy), and dealing with returns (both legitimate and not) are imprinted in my memory.

As a consumer, I've spent a lifetime shopping at stores in all types of retail industries. Instant credit application or 90 days same as cash (furniture), loyalty programs (apparel and video rental), home delivery and installation (appliances), merchandise security (books and other media), technical service — warranty service contracts (small engine equipment), store-within-a-store (banks in grocery stores), and real-time inventory availability (home electronics) are just a few of the many added processes designed to make the shopping experience faster and better.

Like everyone else, retailers have had to figure out [how to deliver more for less](#). In SCOR language, that means improving delivery reliability, flexibility and responsiveness by **planning, sourcing, making, delivering** and **returning** more effectively and efficiently. The retail industry is setting the bar pretty high: [Table 1](#) compares supply chain key performance indicators (KPIs) of select retailers and their

## What is SCOR?

The **Supply Chain Operations Reference** model, developed by the *Supply-Chain Council*, provides a standard methodology for managing supply chain projects centered on Plan, Source, Make, Deliver and Return.



industries. The following metric definitions were used for calculations:

**Pretax Profit Margin** equals Last 12 Months (LTM) Income Before Taxes divided by LTM Revenue, expressed as a percentage. The percentage represents the amount of each dollar of Revenue that results in Income Before Taxes.

**Return on Assets (ROA)** equals the LTM Net Income from Total Operations divided by the Total Assets from the most recent balance sheet. A measure of profitability, ROA measures the amount earned on each dollar invested in assets.

**Days of Sales Outstanding** equals the Receivables from the most recent balance sheet divided by LTM Revenue multiplied by 360.

**Days Cost of Goods Sold in Inventory** equals Average Inventory from past two annual balance sheets divided by latest fiscal year Cost of Goods Sold, multiplied by 360.

The challenge with using SCOR 5.0 in retail industries is that it does not contain processes and metrics that are intuitively relevant to a store. Recognizing this, the Supply-Chain Council initiated a development project to [expand the model to include store operations](#).

With *Walt Disney Co.* as the sponsor and contributing companies including *Best Buy Co. Inc.*, *Deloitte & Touche*, *Gold'n Plump Poultry*, *PRAGMATEK Consulting Group Ltd.*, *SUPERVALU Inc.*, *Target Corp.*, *Technicolor* and the *University of San Diego*, the project team presented preliminary recommendations at last month's SCOR Users Conference. The rest of this article discusses some of the key proposed changes.

**Proposed process changes**

The team recommended that no changes were needed to the SCOR Level 1 framework of Plan, Source, Make, Deliver and Return. While this statement may seem trivial, one of the alternatives was to create another Level 1 like **Sell**, which would significantly change the scope of the model.

Proponents of this point of view state that retail store costs are accounted for in the Sales Expense category of Sales, General and Administrative (SG&A) versus Cost of Goods (COGS), and thus warrant a new major process type. The counterpoint view (and eventual winner) is to think of the retail store as [an extension to the Deliver process](#) and the associated costs another component of Total Supply Chain Cost. This position doesn't deny there are other business processes — like product development, sales, marketing, human resources, etc. — but attempts to determine where the retail store best fits within the SCOR model.

The team recommended the addition of a SCOR Level 2 category, **D4 — Deliver Retail Product**, to more effectively model [different material flow configurations](#) between supplier and suppliers' supplier, retail distribution, retail stores, and the ultimate consumer (see [Diagram 1 — Simulated Geographic Map](#)).

In this example, think of the product

**Table 1. Supply Chain KPIs of Select Retailers**

	Pre-Tax Profit	Return on Assets	Days Sales Outstanding	Inventory Days of Supply
<b>Company</b>				
Home Depot	9.9	11.2	7.8	66
Best Buy	4.3	8.2	4.0	52
SUPERVALU	1.2	3.7	8.3	24
Target	5.9	5.6	3.7	57
Wal-Mart	5.1	8.3	5.8	44
Albertsons	4.2	4.1	5.8	44
<b>Industry</b>				
Building Materials/Gardening Supplies Retailing & Wholesale	9.8	11.4	7.2	67
Consumer Electronics & Appliance Retailing	4.3	7.3	11.8	65
Food/Food Wholesale to Grocers	2.5	5.6	17.0	24
Retail: Discount & Variety	3.6	4.8	6.1	56
Retail: Grocery	2.8	3.4	9.2	33

source: Hoovers Online — 2001 reported data

**Table 2. Proposed Deliver Process Categories**

<b>D E L I V E R</b>			
<b>D1 Deliver Stocked Product</b>	<b>D2 Deliver Make-to-Order Product</b>	<b>D3 Deliver Engineer-to-Order Product</b>	<b>D4 Proposed Deliver Retail Product</b>
<b>D1.1</b> Process Inquiry & Quote	<b>D2.1</b> Process Inquiry & Quote	<b>D3.1</b> Obtain & Respond to RFP/RFQ	<b>D4.1</b> Determine Restocking Requirements
<b>D1.2</b> Receive, Enter & Validate Order	<b>D2.2</b> Receive, Configure, Enter & Validate Order	<b>D3.2</b> Negotiate & Receive Contract	<b>D4.2</b> Generate Stocking Schedule
<b>D1.3</b> Reserve Inventory & Determine Delivery Date	<b>D2.3</b> Reserve Resources & Determine Delivery Date	<b>D3.3</b> Enter Order, Commit Resources & Launch Program	<b>D4.3</b> Pick Product from Backroom
<b>D1.4</b> Consolidate Orders	<b>D2.4</b> Consolidate Orders	<b>D3.4</b> Schedule Installation	<b>D4.4</b> Stock Shelf
<b>D1.5</b> Plan & Build Loads	<b>D2.5</b> Plan & Build Loads	<b>D3.5</b> Plan & Build Loads and Shipments	<b>D4.5</b> Fill Shopping Cart
<b>D1.6</b> Route Shipments	<b>D2.6</b> Route Shipments	<b>D3.6</b> Route Shipments, Select Carrier	<b>D4.6</b> Checkout
<b>D1.7</b> Select Carriers & Rate Shipments	<b>D2.7</b> Select Carriers & Rate Shipments	<b>D3.7</b> Pick Staged Product	<b>D4.7</b> Deliver and/or Install
<b>D1.8</b> Receive Product at Warehouse	<b>D2.8</b> Pick Staged Product	<b>D3.8</b> Load Vehicle, Generate Ship Docs & Ship Product	
<b>D1.9</b> Pick Product	<b>D2.9</b> Load Vehicle, Generate Ship Docs & Ship Product	<b>D3.9</b> Receive & Verify Product at Customer Site	
<b>D1.10</b> Load Vehicle, Generate Ship Docs, Verify Credit & Ship Product	<b>D2.10</b> Receive and Verify Product at Customer Site	<b>D3.10</b> Test and Install Product	
<b>D1.11</b> Receive & Verify Product at Customer Site	<b>D2.11</b> Test and Install Product	<b>D3.11</b> Invoice & Receive Payment	
<b>D1.12</b> Install Product	<b>D2.12</b> Invoice		
<b>D1.13</b> Invoice			

**About SCOR**

The Supply Chain Operations Reference (SCOR) model has been developed by the Supply-Chain Council and is **SCNTN's** recommended implementation model for SCM initiatives. While the author of this article is affiliated with the Supply-Chain Council, this article was prepared under the direction of **SCNTN** and was not subject to prior review or approval by the Supply-Chain Council or any of its members/affiliates.

To learn more about the Supply-Chain Council, including a white paper guide to Level 1 metrics: [www.supply-chain.org](http://www.supply-chain.org)

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movement as Gold'n Plump Boneless Skinless Chicken Breast and Disney's Return to Neverland DVD. While Technicolor, Disney, SUPERVALU, and the Target and Best Buy regional distribution centers use other SCOR processes, D4 refers to the process category to deliver products to the consumer *in the store*.

Previously, SCOR model retail scenarios attempted to characterize the store with **D1 — Deliver Stocked Product**. To a manufacturer this makes logical sense, but from a retail perspective the breakdown occurs in [how the work processes and information flow are defined](#).

To make the point, the team contrasted the proposed and existing Deliver process categories at SCOR Level 3 (see [Table 2 — Proposed Deliver Process Categories](#)). As an employee and consumer it is easier to visualize the D4 retail store processes of determining stocking requirements, generating a stocking schedule, picking product from the backroom, stocking the shelf, helping fill the customer's shopping cart (directly and indirectly), checking out (including the scan, credit approval, payment, etc.), and delivering/installing the product (i.e., a dishwasher) than it is force-fitting the D1 elements.

Additionally, some team members discovered that EDI and XML transaction sets as organized in CPFR (collaborative planning, forecasting and replenishment) and the Efficient Consumer Response (ECR) scorecard map more effectively to the D4 elements.

**Metrics — Benchmarking**

With a goal of [more standardized metrics](#) and initiating a benchmarking study for the Retail Sector using SCOR, the team brainstormed over 30 metrics and organized them to a recommendation of four changes to the current scheme, as noted in [Table 3 in red](#).

Retail Store Cost or Retail Store Supply Chain Cost represents the "activity based" costs as organized in the D4 Level 3 elements (again, see [Table 2](#)). Common themes involve Backroom Costs, Floor Stocking — Merchandising Cost, Checkout Costs and Delivery/Installation Costs.

The main exclusions were costs for sales associates on commission and the customer service costs for managing the returns processes. The latter is defined effectively under the current SCOR Warranty — Returns Processing Cost measure.

Many of you have already experienced the fact that supply chain performance is not just a function of how your company performs but how your company performs *with its* suppliers and customers. The first step in any improvement effort is a common understanding and set of goals.

Though not perfect, the proposed changes to effectively integrate the retail store into the SCOR model is definitely a step in the right direction.

**Table 3. Proposed Metric Changes for Retail**

**On-time Delivery**

- to Request
- to Commit
- [In Stock at Shelf](#)

**Order Fulfillment Lead Time**

- Order Receipt to Order Entry
- Order Entry to Order Shipment
- Order Shipment to Order Receipt
- [Store Replenishment Lead Time](#)
  - [Create Replenishment Order to Receipt at Store](#)
  - [Receipt to Stocked Shelf](#)
  - [Stocked Shelf to Checkout](#)
  - [Checkout to Deliver/Installation Complete](#)

**Total Supply Chain Management Cost**

- Order Management Cost
- Material Acquisition Cost
- Supply Chain-related IT Cost
- Inventory Carrying Cost
- Finance and Planning Related
- [Retail Store Cost or Retail Store Supply Chain Cost](#)

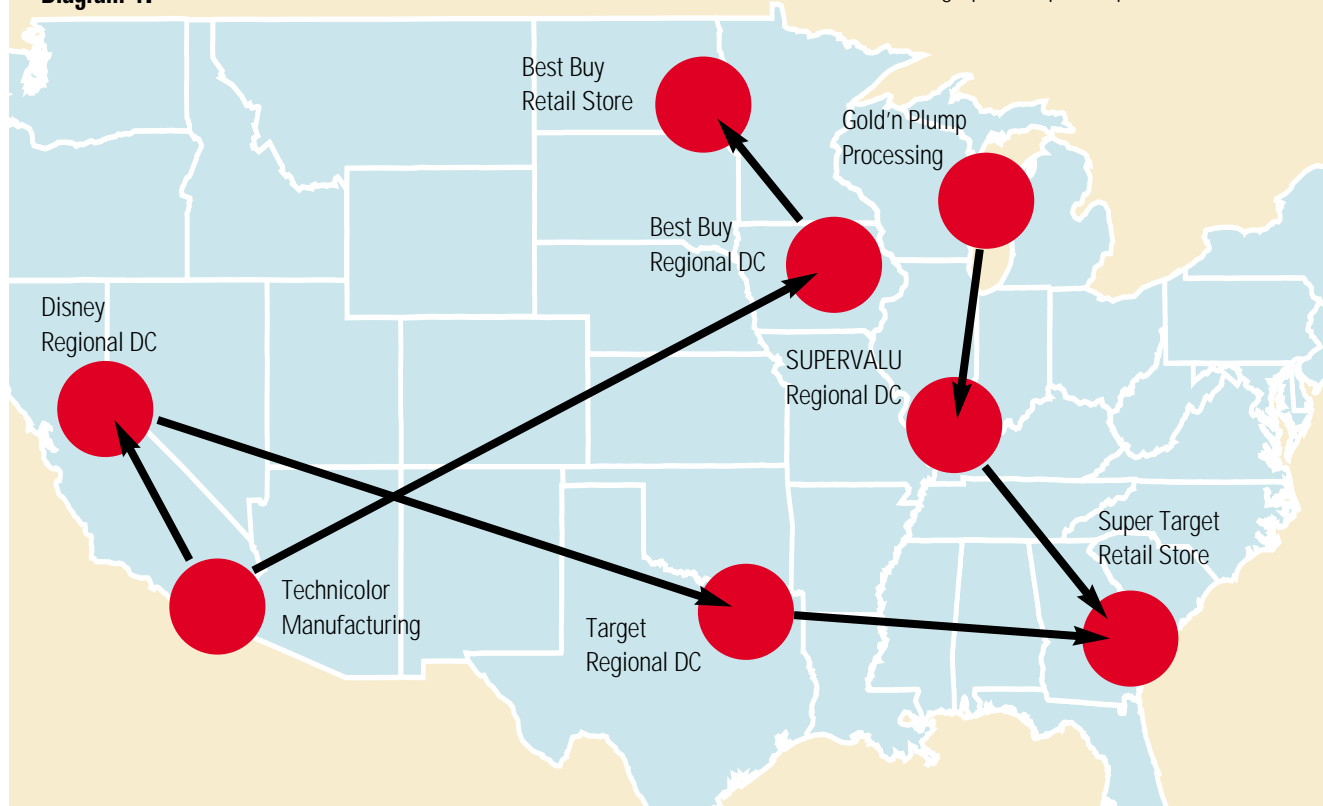
**Warranty** — Returns Processing Cost

**Cash-to-Cash**

- Days of Inventory
  - Raw
  - WIP
  - FG
  - [Store Inventory](#)
    - \* [Days Sales Outstanding](#)
    - \* [Days Payables Outstanding](#)

**Diagram 1.**

Geographic Map Example — NOT ACTUAL



Peter Bolstorff is the founder of Minneapolis-based **SCE Limited**, a training firm spun off from PRAGMATEK Consulting Group Ltd. that is focused on educating the do-it-yourself business marketplace in supply chain improvement techniques. He chairs the SCOR Integration Committee and the Supply-Chain Council's Technical Committee, and designed the Supply-Chain Council's executive education series to aid in the successful implementation of SCOR. He is serving a two-year term on the SCORboard, the board of directors for the Supply-Chain Council.

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