



“Real Time” is Too Late

BY JEFF HARROP

“Never look down to test the ground before taking your next step; only he who keeps his eye fixed on the far horizon will find the right road.”

*- Dag Hammarskjold
(1905-1961)*

The trend toward sharing information “in real time” has been developing in retail supply chain management for well over a decade now. Today, many retailers share vast amounts of data with their suppliers on a daily basis – store level point-of-sale data, inventory balances in stores and warehouses, open orders throughout the supply chain, and so on.

Recently, RFID has emerged as a dominant technology to further the goal of real time information sharing. While the jury’s still out on the exact future of the technology, the experts are arguing

that it may hold the key to true real time tracking of individual products from the time it leaves the factory until the time it arrives in a customer’s home.

Yet, despite this gravitation to sharing more information more quickly, retail out-of-stocks have stubbornly remained at 8% since they started measuring it*.

VISIBILITY VERSUS CLAIRVOYANCE

“Visibility” is another oft used supply chain term, usually with the words “real time” in close proximity. While the phrase “real time visibility” has never been defined in a formal way, it seems to boil down to a

* The persistent retail-out-of-stocks problem has been documented in many studies, including: “Where to Look for Incremental Sales Gains – The Retail Problem of Out-of-Stock Merchandise”, a 1996 study conducted by Andersen Consulting for the Coca-Cola Retailing Research Council, “Retail Out-of-Stocks: A Worldwide Examination of Extent, Causes and Consumer Responses” conducted by the Food Marketing Institute and Grocery Manufacturers of America in 2002 and most recently “Improve OOS Methods at the Shelf”, a 2006 study by Tom Gruen from University of Colorado and Daniel Corsten from London Business School.

very simple philosophy: “Whenever something has happened in the supply chain, tell everyone about it – FAST!”

On Tuesday, for example, Retailer X sells some quantity of Product Y in each of its stores. Overnight, all of the POS transactions are collected, summarized and given to the manufacturer of Product Y. On Wednesday morning, the manufacturer knows how many units were sold in each store on the previous day and how much inventory is left over.

As impressive as this level of visibility

is, there’s still a problem. All of the units of Product Y that were scanned at the cash register yesterday were placed on the store shelf 3 or 4 days ago. Before they were placed on the shelf, they needed to be received in the store’s back room. Prior to that, they had to travel on a truck to the store, and so on - right back to the sourcing of raw materials at the factory where the product is made.

When you add up the time for all of the activities that are required to get the product from the factory to the store

shelf, the “real time” information begins to look quite dated. What the retailer is essentially doing is providing a status update on products that the supplier already planned, produced and shipped several weeks or even months ago. Because of this lead-time phenomenon, information about what happened yesterday is only marginally helpful to an upstream partner. What they really need to know is what’s *going to happen* – and the precise impact on their operations – in the upcoming months. Shaving minutes off the time it takes to share yesterday’s transactions will do little to alleviate constraints imposed by the laws of time and distance.

So is sharing real time information in the supply chain a waste of time? Of course not. Having up-to-date transactional data is a good and necessary thing, but it’s simply not enough to make significant service and inventory improvements in the retail supply chain. Trading partners need to be sharing information about the *future*, not the recent past. Supply chain clairvoyance must replace supply chain visibility.

SCANNING THE FAR HORIZON

Knowing how much money you currently have in your bank and investment accounts is certainly a necessary input for any kind of retirement planning, but this information alone does not constitute a retirement plan. You still need to project future deposits and withdrawals and make assumptions about rates of return. Then continually update and revise as time passes and conditions change.

Planning the flow of products in the retail supply chain is no different. While real time transactional information is the base on which a supply chain plan can be built, you still need to continually project and model the forces of demand and supply in a time-phased way to make this real time data worthwhile. Only by keeping our eyes “fixed on the far horizon” will we finally be able to make a major impact on retail out-of-stocks and supply chain inventory investment.

Suppose that a weekly, store level consumer demand forecast for Product Y is created 52 weeks into the future. Further suppose that – in combination

with real time information about current stock levels, POS sales, in-transits and ordering rules – these forecasts were used to calculate 52-week store purchasing plans which are then shared with the servicing distribution centres. With full knowledge of the stores’ future time-phased requirements, the DCs can continue to model the “chain reaction of demand” right back to the supplier.

By planning in this fashion, a treasure trove of information emerges. It’s like having a data warehouse where all of the date stamps are in the future instead of the past:

- Future point-of-sale transactions for every product at every store on every day.
- Every product movement between

every store, distribution center and manufacturing plant in the extended supply chain.

- The future inventory balance for any product at any location on any day for the upcoming year.

Further, because upstream flows are explicitly modeled, this information can be completely updated and refreshed on a daily basis using the real time information infrastructure. When sales come in higher or lower than expected at a store, the precise impact to every other node – and what they need to do in response – is instantly and automatically modeled. Today’s DC and manufacturing schedules are completely refreshed and synchronized to reflect what happened on the store shelves yesterday.

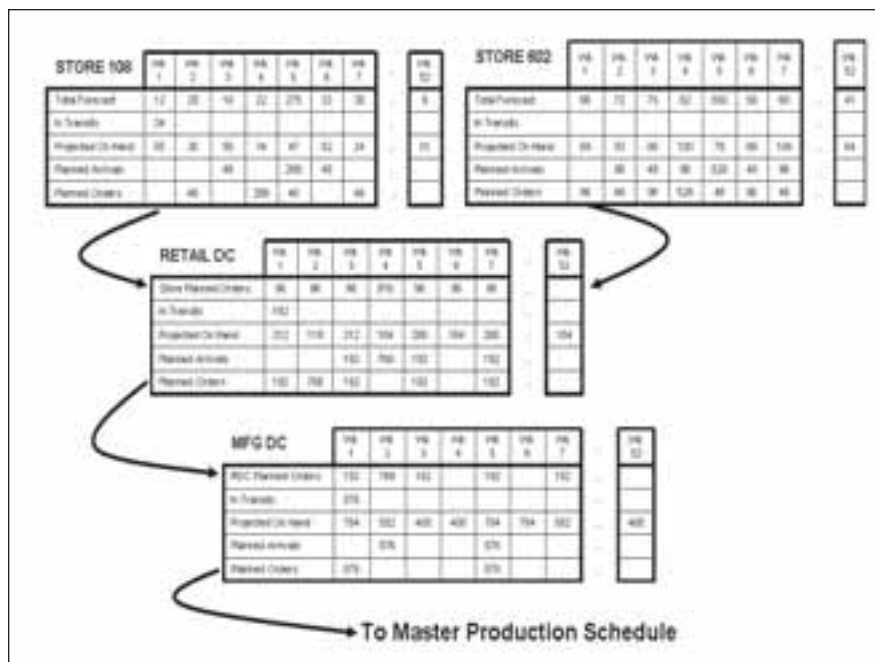
PUTTING THE CONSUMER IN THE DRIVER’S SEAT

Most of the planning effort in the retail supply chain today is focused on distribution and manufacturing. Retail stores are treated as demand points that need to be predicted, rather than supply points whose inventory should be carefully managed. Failing to include the retail stores in the supply planning process is akin to ignoring 95% of the inventory locations in the supply chain. Even worse, the locations being neglected are the ones that directly face the customer, and hold the most costly inventory.

The store represents the beginning of the information flow (POS transactions) and the end of the product flow (when the consumer leaves with a purchase). By pushing the demand/supply separation awareness up to this level, it’s possible to create a truly consumer responsive supply chain. All nodes – including factories, distribution centres *and retail stores* – behave as supply points with the explicit purpose of satisfying consumer demand. Furthermore, this consumer centricity is built right into the business processes being executed by every trading partner.

OLD BECOMES NEW

This new planning approach (coined “Flowcasting” because it replaces forecasts with flow calculations at multiple supply chain echelons) uses the same time-tested approach at the retail level that’s been used in distribution and manufacturing for decades. The idea is simple: Once each store has forecasted what they expect to sell, they can



The chain reaction of demand from point of sale to point of manufacture

calculate their supply needs as a simulation based on their current on hand balances and ordering rules. Because the sum of the stores' supply needs represent a stream of planned withdrawals from the retail DC (and so on, right back to the manufacturing plant), the chain reaction of demand throughout the entire supply chain is recalculated on a daily basis as market conditions change. The retail store is the only place where future withdrawals (i.e. POS sales) need to be estimated.

So, if this approach is so intuitive and has been proven in manufacturing and distribution, why hasn't there been widespread adoption in retail? The issue is not one of complexity or lack of acceptance, but size. The rules for planning a stocking location in a store are very similar to those used to plan at a DC. However, when you look at the distribution level of the retail supply chain, there are often tens or hundreds of thousands of locations. At store level, there can be tens or hundreds of *millions*. Until recently, the computing horsepower didn't exist to run nightly 52-week plans for this number of product/locations. This is now very much achievable with today's technology.

AVOIDING OUT-OF-STOCKS WITH LESS INVENTORY

With traditional store level ordering approaches, such as order point or visual shelf review, shelves could be in a stock low or out-of-stock status for days between order reviews. Instead, by Flowcasting on a daily basis, inventory levels are critiqued daily for every product

at every location. When a stock low situation is anticipated, the impact is automatically modeled. Simulations and pilots have shown that it's possible to reduce retail out-of-stocks by 70-90%, while dramatically reducing supply chain inventories at the same time. This is because time-phased future information is being shared among trading partners to reduce demand uncertainty. Less uncertainty means less safety stock is required.

ELIMINATING UNNECESSARY FORECASTING

Upstream trading partners invest significant time, money and effort in trying to determine what their customers are going to do. This need to guess most often results in one of two outcomes: disappointed customers or clogged warehouses. If suppliers instead received actionable information (how much needs to be shipped and when) from their retailer customers months into the future, they would be able to eliminate key account shipment forecasting and offer those customers shorter commit times and protected supply. As a critical mass of customers share this information, manufacturers will be presented with an opportunity to transform their operations from make-to-stock to make-to-order.

In addition to replenishment and production planning, other functional areas within retailers, distributors and manufacturers have had to develop their own separate methods for forecasting capacity, budget, transportation and labour requirements. Even though the same operational activities (product movement through the supply chain)

drive all of these requirements, rarely do the forecasts all agree, unless by coincidence. Contrast this to having future dated demand, supply and inventory information, in selling units, at every echelon in the retail supply chain. As a consequence, it's possible to convert and aggregate plans to any level desired in any unit of measure using a simple calculation instead of a separate forecasting process.

CONCLUSION

The most responsive retail supply chains will be those that have an unambiguous "rack and pinion" relationship with consumers, with no interpretation required from one step to the next. In addition to the obvious benefits in terms of retail out-of-stocks (1-2% instead of the current 8%+ levels) and inventory (reductions of 30-50% supply chain wide), the depth and transparency of the information means that these results can be achieved with a much higher sense of control over the business and far less unnecessary forecasting by people who would probably rather not be doing it anyway. The real time information is now ready. The next step is to use it to really *plan* rather than just execute. ■

Jeff Harrop is a founding partner of Demand Clarity Inc and co-author of the groundbreaking new book "Flowcasting the Retail Supply Chain" with Mike Doherty and André Martin (author of "Distribution Resource Planning" and "Infopartnering"). To learn more about the concepts described in this article and to download the first 5 chapters for free, please visit www.flowcastingbook.com.