Separation of Power in the Demand Chain

Who owns the Forecast for Replenishment and Why it Matters?

Selecting the right forecasting and replenishment solution is one of the most important business decisions you can make. Making the right decision can propel your company forward while the wrong decision may potentially be catastrophic. The need to separate forecasting and replenishment functions is one very important factor to weigh when evaluating supply chain solutions.

Your role in the supply chain also matters. Your company could be solely a manufacturer, distributor, or retailer or could be some combination of two, or even all of the above. We asked some of our experts for their opinions on the question of separating demand forecasting and inventory replenishment. From a software design and consulting, retail, and wholesale perspective,

Anders Herlitz – Executive VP & Architect

Separation of Powers in the Demand Chain

In my over 50 years of designing purchasing systems and lecturing on how to excel in the world of purchasing, I have never found a need for breaking up the forecasting and replenishment functions in the purchasing process. I have been working in this arena since the advent of mainframe computers in *the early 1960's that gave us the abilities to apply scientific methods to retail and wholesale companies that revolutionized the business world.

From time to time there have been software and consulting firms who have been promoting the concept of separating forecasting from the replenishment buying function in order to improve the results for Retail Store Chains and Wholesale Distributors. What their motivation might be I cannot guess—Perhaps it is because it is all they know. Most Universities still only teach Supply Chain and Logistics with a strong emphasis on Manufacturing. How these goods get from the manufacturers to consumers is still mostly ignored.

The most interesting result of splitting Demand Forecasting out of the overall purchasing process is that the oldest rule of buying then does not apply anymore, accountability—who is responsible for customer service and inventory dollars? There is an old saying in buying that goes like this:

"When you are out of stock, it is the buyer's fault! When you are overstocked, it is the buyer's fault! When everything is going well, give thanks to the sales department!"

In this separated world, who then is responsible for the inventory? Who is responsible for customer service? These are the two most important factors to control in a distribution business! Who has ownership? No one, neither the forecaster nor the buyer! But both can and will affect your profitability and your service performance.

The concept of separating forecasting and buying comes out the manufacturing world from MRP (Manufacturing Requirements Planning). In MRP, buyers are given manufacturing plans or schedules to adhere to. The plans become the basis for the "forecasts" for the raw materials used in the manufacturing buying process, and rightly so. The efficient uses of plant, equipment, and manpower is optimized in this process.

Some food and consumer goods manufacturers have a much simpler process, and are not as dependent on the MRP Process. They have access to a demand signal closer to the end consumer. From a purchasing point of view they are more like distributors and react to the fluctuations in demand more than some manufacturers. Food, Pharmaceutical, and Chemicals companies come to mind.

Then came the concept of Supply Chain. The mere fact that we call it the Supply Chain, not the Demand Chain, indicates where the concepts came from and how manufacturing philosophies have percolated down where they don't apply. Other examples of the cross-pollination are "Just-in-Time", "Demand Planning" and DRP, Distribution Requirements Planning.

The idea of bottom-up planning, the ability to read the demand signals and use it as the basis for forecasting and replenishment is a relatively new idea , for retail with the roll-out of point of sales systems POS, that originated in the 1980's and has been refined over the last few decades. The basic concept of the demand chain is that material movements (or replenishment execution) are directly triggered by demand itself.

Before this concept was introduced, buyers made all their decisions when they were building purchase orders. When sales increased, they applied the most common recovery technique, which we call "noise level minimization", best described as "When in Doubt Buy More", which most often is not a good strategy. The idea of being demand driven was revolutionary, responding to the demand signal and making buying decisions with this goal in mind: **Ordering the right stock at the right time for the right location.**

The revolutionizing part of this concept was that it highlighted the importance of "when" decisions should be made. Outages are prevented by buying earlier not by buying more. By basing decisions on demand history that separates out lost sales and promotional events we can greatly improve the strength of the demand signal and the quality of decisions. Even in the retail environment, we can do better than just POS, since it only describes what we sold. It ignores what we did not sell. Various techniques have vastly improved retail forecasting over the years.

Balancing the variability of the demand, variability of the vendor lead times, buying in the most economic quantities along with managing these factors to meet your service and profit goals is the goal of a demand driven purchasing system.

In their world, the buying function is a result of a top down planning function, not a bottom up consumer demand signal. The buyers in MRP do not have the luxury of seeing the demand for the product, instead it is derived from the production schedule. In building complex items, such as airplanes and electronics devices it is a wonderful and necessary process that stretches over many months of time. How else could Boeing determine how many carbon fiber wing assemblies are needed to deliver to Seattle in August of next year.

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Balancing the variability of the demand, variability of the vendor lead times, buying in the most economic quantities along with managing these factors to meet your service and profit goals is the goal of a demand driven purchasing system. It also needs to help you manage changes, alerting you to changes where significant events have happened in the market.

How about promotions? The positive effect of promotions is typically quite difficult to forecast, but should come from the merchandizers, category managers or alike. Product and market knowledge are important to provide input to future orders. And then the promotional and after-promotional effects must be filtered out of the regular demand history.

How about New Item Introductions? Similar to promotions, new item introductions require product as well as market knowledge. The buying requirements of Promotions and New items must also have simple, yet complete, inputs into a demand driven purchasing system.

The goals of a buyer in the wholesale or retail world is to optimize customer service and profitability. Slow moving products will typically be assigned a lower service level goal than fast movers. This is very different from those of a buyer in manufacturing, where the production plan will dictate how and when to buy. For a manufacturer, being out of stock on parts and / or sub-assemblies, that is an input to a manufacturing process, is a no-no. A

production line missing ONE part will idle until the part is replenished. This means that the availability of slow items tend to be as crucial as that of fast items. That is to say, all items must have a goal and as often as possible the result is 100% in-stock. In the retail and wholesale world, 100% service isn't possible or profitable and even if it were, it would not be the most profitable strategy

Applying MRP/DRP methods in the distribution world is like trying to knock a square peg into a round hole. It certainly tends to exacerbate the buyers' job. Manufacturers have always tried to "control" their customers; requiring long lead times, dictating minimum inventory levels, fixed reorder schedules, etc. All of these tend to make it more difficult for their customers to achieve high and steady service levels. Getting rid of those kind of constraints should be the goal of a "demand-driven" company. Working in a collaborative way with your trading partners will lower costs and ultimately increases product sales at all levels of the Demand Chain.

Conrad Phillips – Systems Architect

Focus on Communication

For eight years I worked for a sporting goods retailer as VP of Replenishment and Allocation, responsible for all of the store ordering. The chain had almost 500 stores nationwide and each store had 30,000 products active at any time, translating into 14 Million store/product locations. We had a centralized replenishment group, of 180 that was responsible for store replenishment, assortment planning and allocation. Each of the Replenishers was daily responsible for about over 75,000 SKU-locations.

Sporting goods has a lot of seasonal products. Particularly in sports apparel, as much as 60% of the assortment can changed each year and many items were active for only one or two seasons of the year. In an average year, including the product turnover, each replenisher was managing about 200,000K SKU-locations.

Each person was responsible for both the demand forecast and the replenishment of the inventory. I am not saying it was easy, but we achieved 95% in-stock week in and week out. I am still very proud of my team and their performance.

We couldn't have achieved this without the **efficiency** of having one person responsible for both the forecast and the replenishment decisions. Since I left, they replaced the system we used successfully for my eight years there with a "more sophisticated system" that split the ownership of the forecast and the replenishment between two groups. One year after implementing the new system the fill rates were averaging 5 percent lower and they had increased the number of forecasting and replenishment people to over 800!

It is my understanding that there has been a lot of finger pointing and unhappy people there. The true measure of unhappiness is that four people have had my job since I left the company and they have cycled through 3 new presidents.

In no way am I saying that a replenishment team can do what we did without a sophisticated forecasting and replenishment system. But what this example illustrates is you can fail even with a sophisticated system if you split forecasting from replenishment. In simple words, for goodness sake let the buyers own their forecasts and their buying decisions.

One key to our high service was information flow. Since we had centralized replenishment, we needed to encourage communication from the stores so we would know when local events would occur. A monthly incentive program was created for the replenishers and each store's department heads to better communicate on local events and service problems.

Bonuses were paid if they made their goal of 95 percent in-stock for the month. Guess what, Over 98 percent of the bonuses were handed out! We had insights to all kinds of local events: parades, marathons, festivals, spring break. We also were familiar with local fishing, hunting, football, baseball seasons and unique back to school timing for each store.

With strong communications and having one person responsible for both the forecast and the replenishment decisions, you can increase efficiencies in performance and manpow-

Marty McHugh – Marketing Director

Singular Customer Focus for Results

Earlier in my career, I spent 15 years working in customized foodservice distribution for quick serve restaurants. Two companies had national and regional distribution programs with the largest 2 burger chains and a select group of other restaurants in the segment.

Having worked with 4 or 5 forecasting and replenishment systems in my career, I have seen forecast maintenance responsibilities held by the replenisher and situations where they were not. Separating responsibilities can work in foodservice distribution, but works best when: there are a limited number of items, less than 50,000 SKU locations, the replenishment planning is centralized, the overall supply chain is tightly managed from end-to-end, and everyone in the company along with the suppliers are hugely focused on customer service.

Companies servicing quick-serve restaurants set an **unattainable goal of 100 percent service, they are looking for the perfect order**. Anything that is backordered will be re-delivered if the stores require the product. Air freight, messenger service, and all other means were used to get the products delivered. Purchasing fill rates averaged as high as 99.96 percent. That is 4 backorders out of 10,000 cases ordered. When you fell below 99.80 in that environment, you were having a really bad week.

As in Conrad's sporting goods example, the organization was structured and focused on providing excellent service. There was a continuing emphasis on teamwork and communications. To motivate this high level of performance, the forecast analysts and buyers had bonus incentives based on forecast accuracy, service levels, and inventory turns.

In this environment, with a limited number of products, having forecast analysts and replenishment buyer functions separated worked well. This is because the company recognized the follow factors:

1.) The complexity of the replenishment solution - Inforem. It required trained forecast analysts reviewing forecast exceptions with replenishers and updating the item demand history. Inforem was designed before there was something called “user interface.” Doing 1980’s style maintenance is not a pretty thing. A burn on resources.

2.) The company understood the costs associated with managing forecasting problems, High forecast deviations translated into service issues, unhappy customers and increased logistics costs. If higher service required additional analysts the tradeoff was well worth the investment and the company was willing to devote resources to fix the forecasts.

This structure worked in customized food distribution because the cost of non-compliance (a problem) was way too high. Fixing a service problem might cost thousands of dollars, fixing the cause of a potential problem, the forecast, before it caused an out of stock was smart business. When you only have one very large customer you need to keep them happy!

Conclusion: Finding the Right Balance

For your company, when you are evaluating supply chain software and the structure for your team, we would recommend looking at the complexity of the solution vs your business goals. Will the solution deliver the results your customers expect at a price you can afford, both in terms of people and inventory investment? Some solutions provide functionality but at a significantly higher price, both in terms of personnel and the inventory required to deliver to your service goals.

Where your company stands in the “supply chain” as a manufacturer, distributor, or retailer, your margins, customer service and turns goals, and the number of SKUs, all of these factors need to be weighed when looking to make a change. The level of functionality and the complexity of software varies greatly. Your software selection can hugely affect your internal processes and your business results; affecting both customer service and profitability.

Finding a solution that matches the characteristics of your business and provides your team a simple to understand user interface with sophisticated levels of functionality, should be your goal.

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