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No Forecasting

Have you ever asked yourself why we spend so much time and energy to develop a forecast, and then it's so often wrong?

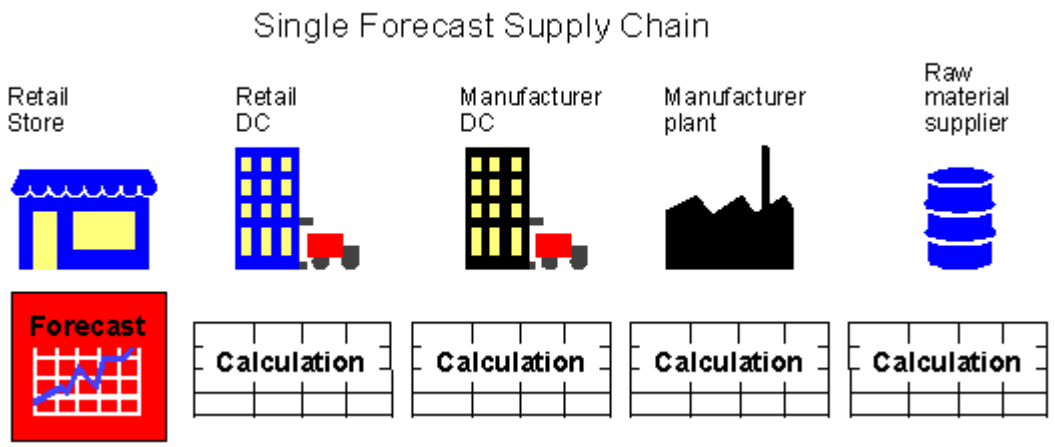
Low forecast accuracy was one of the key findings in a recent Grocery Manufacturers of America study by Roland Berger Strategy Consultants. "Errors at the national, monthly item-level - measured as mean absolute percentage error (MAPE) - was 23 percent in 1996 and 31 percent in 1999. In 2002, the error rate had increased - to 34 percent on a national, monthly level and 44 percent on a shipping location level."

How can this be? A huge effort over a sustained time period, and it's getting worse.

It makes you wonder whether we're working on the real problem.

Back in 1971, Joseph Orlicky one of the pioneers in time-phased planning systems said, "Never forecast what you can calculate."

If you were to apply Joe's thinking to a retail supply chain, a surprising conclusion emerges.



There would only be one forecast, at the store-level, and everything else in the supply chain would be calculated from that single number forecast.

This may seem like heresy, but if you think about it for a minute, it makes a great deal of sense.

One perspective is to take the factors that influence demand in the supply chain, and sort them into two categories: those that are included in a forecasting algorithm and those where a forecasting algorithm is blind.

No Forecasting

Forecast considers	Forecast cannot see
Baseline demand	On-hand balance
Seasonal sales pattern	Shelf configuration or safety stock changes
Trend	Supplier changes
Promotions, weather, etc.	Minimum shipping quantities
	Delivery schedules
	Product phase-in / phase-out

What's interesting is that the calculated demands – demands for the levels below the retail store - get the best of both worlds. These calculated demands incorporate all the factors of a forecast (baseline demand, seasonality, etc.) because they were derived from a statistical forecast. Additionally the calculations also account for all the factors that a forecast is unable to consider (on-hand balances, shelf configurations, etc.).

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A simple example illustrates this:

Retail store 1

DAY	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon
Forecast	8	7	7	8	9	11	11	8
In-transit								
Pln Shipments			24			24		24
Proj.on-hand	22	15	32	24	15	28	17	33

Retail store 2

DAY	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon
Forecast	10	9	9	10	11	13	13	10
In-transit								
Pln.Shipments						24		24
Proj.on-hand	64	55	46	36	25	36	23	37

Retail DC

DAY	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon
Calculated demand			24			48		48
In-transit								
Pln.Shipments						120		
Proj.on-hand	60	60	36	36	36	108	108	60

In this example, some excess inventory exists at Retail Store 2. (If you're not familiar with the type of spreadsheets in this example, the following link contains an explanation: http://www.retailpipeline.com/1002/retail_resource_planning/ Multi-echelon.htm).

Notice that the demand which falls on the Retail DC incorporates the store-level forecasts as well as the factors a forecast cannot see. As a result of some excess inventory at Retail Store 2, the calculated demand on the Retail DC is reduced for the next several days.

A number of other examples can be constructed to show how these factors such as supplier changes, delivery schedules, minimum shipping quantities, new product introductions and so on all affect demand. In each case, the calculation will give a more accurate picture of the future than a forecast.

Summary

Q. Why has there been so little progress in forecast accuracy?

A. We've been trying to forecast what we should be calculating.

Forecast error in the supply chain manifests itself in the form of lost sales, increased transportation and material costs, excess inventory, and reduced productivity. Today, trading partners no longer have to accept these costs. They have the ability to answer the question, "What is my customer going to order?" and to do so more accurately than ever before.

Consequently, a quiet revolution has begun in the retail supply chain to eliminate forecasting except at the store level. It will affect every retailer and every manufacturer, and it will profoundly alter how each organization does business in the future.