

RETAIL DEMAND PLANNING

Demand planning could be defined as the art of getting the right stock to the right store at the right time. It ain't easy, as any retailer will tell you, but new tools and methodologies make it easier to get the mix of supply and demand right.

BY LUKE TOMKIN

FEW WOULD ARGUE that demand planning directly and significantly impacts retail business profitability. Just consider how often poor forecasting leads to missed sales or excess inventory holdings, resulting in lost revenue and wasted investment.

While the need to employ effective demand planning processes in a retail environment is clear, the best approach is not always evident. There are two main choices for retail demand planning: Top-down, and Bottom-up. The first cedes control over demand forecasting to a centralized head office, while the second gathers individual forecasts from each store and uses these to drive restocking decisions.

There are legitimate uses for Top-down. It is, for example, often the choice for retailers with short life cycle products and in industries where sales history has little relationship to the future sales, such as high fashion under certain circumstances.

In the majority of situations, however, a Bottom-up demand planning methodology offers the potential for far superior business outcomes. Despite this, a massively disproportionate number of retailers currently use the Top-down approach.

Why is this? In part it is due to historical limitations in both the associated technologies and the sophistication of previous processes that did not support the more demanding (pun not intended!) Bottom-up methodology. Today, with recent advancements in these areas, the Bottom-up method is gathering momentum with progressive and savvy businesses looking to reduce their cost to serve, improve service levels and reduce inventories.



A POS SYSTEM ALLOWS INVENTORY TO BE CHECKED VIA THE INVENTORY DATABASE TO SEE WHEN FURTHER MERCHANDISE NEEDS TO BE ORDERED

In this article we will look at the consequences of both Top-down and Bottom-up methodologies, and then examine some of the requirements of successfully implementing the Bottom-up methodology.

TOP-DOWN

Let's start by taking a look at Top-down planning. We need to begin by looking at how Top-down forecasting specifically influences a business' ability to:

- › Purchase the right stock into the business, and
- › Replenish the right stock to the store

It's best to examine these methodologies with the aid of an example, so let's take a typical small-to-medium automotive parts and accessories retailer based in the states of Victoria (VIC) and South Australia (SA), with four stores in the first state, and three in the second. All seven stores are directly supplied with their stock by one central distribution centre (DC) in Victoria.

To arrive at a forecast, the states generate sales forecasts, which are aggregated by the business and applied to the DC. This appears to be a simple, adequate solution that assists with purchase order creation. However, this form of forecasting does not paint a complete picture.

At a fundamental level, purchase requirements are influenced by three factors:

- › Future sales,
- › Current stock position of the stores versus the desired stock position, and
- › The store lead-times.

The Top-down approach of applying an aggregate forecast at a DC level misses the last two of these factors, which can lead to too much or too little stock arriving too early or too late. Excess inventory holding or missed sales are the natural consequence.

STOCKING WITH TOP-DOWN

Basically, what the business is going to sell, and what and when it needs to buy is not a one-for-one relationship. Thus to handle replenishment under Top-down, stores rely on additional methods. Most often the "Min / Max" replenishment approach is relied upon – the store requests a fixed quantity once a certain stock on-hand trigger point is reached. With constant sales this results in a neat "saw tooth" graph of stock movement at the store, where inventory steadily decreases until it reaches the "Min" measure, and is then topped up to the "Max" measure.

However, when faced with volatile sales patterns (such as seasonal or promotional activity) the result is quite different. The impact of an accelerating increase in sales on the store stock position can lead to "stock outs", while a decrease will lead to overstocks.

Either outcome reduces the profitability of the business.

To summarize, the Top-down approach provides up-front simplicity for demand planning, as only an aggregate level forecast is required. But this simplicity carries the consequence of avoidable costs throughout the rest of the supply chain.

BOTTOM-UP

Using Bottom-up demand forecasting creates quite different outcomes. To return to our earlier example of a small-to-medium automotive parts and accessories retailer, rather than aggregated forecasts at a central distribution centre driving allocation of stock, each individual store prepares its own forecast.

By forecasting at a store level, both stock position and future customer demand can be used to determine replenishment requirements. Having future visibility of demand and replenishment requirements by week or day is essential for maximising sales potential and avoiding lost sales,

especially for promotional or seasonal lines where sales from one week to the next can vary dramatically. An effective store level or Bottom-up forecasting approach:

- › Reduces missed sales by pre-positioning stock prior to customer demand, and
- › Is essential for seasonal and promotional sales noting that Min / Max techniques do not recognise weekly or daily sales variations into the future.

STORE INVENTORY HOLDINGS

The “one-size fits all” or store grading approach common to store stocking policies in a retail network can be eliminated. Inventory held at each location becomes specific to that store’s customer demand requirements, down to a product level. Without this level of precision, it is not possible to deliver consistent service levels across the network, optimally balance inventories and minimise supply chain operating costs. An effective store level or Bottom-up forecasting approach:

- › Can be used to optimise stock holdings on a store by store basis, and
- › Delivers consistent service level performance for all items in all stores.

A SYNCHRONISED SUPPLY CHAIN

By planning demand at a store level, there is no need to forecast at distribution centres, nor estimate purchase order requirements. Distribution Replenishment Planning (DRP) can be used to roll up store level replenishment requirements to the distribution centre or warehouse level, thereby removing assumptions and aligning stocking, replenishment and purchasing through an integrated planning methodology. Error associated with translating a sales forecast at an aggregate level to store replenishment requirements is eliminated. Importantly, alignment of supply chain processes delivers a “single set of numbers” for sales, finance and supply chain functions. An effective store level or Bottom-up forecasting approach:

- › Supports full Distribution Replenishment Planning



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INFORMATION

Understanding your super obligations

The ATO is focusing on helping employers in the automotive industry understand their super obligations.

Some common mistakes employers make when paying super guarantee include:

- not paying enough super contributions
- missing deadlines for super contributions
- incorrectly classifying an employee as a contractor for super guarantee purposes

Employers must pay super contributions (9%) to a complying super fund for all eligible employees by the quarterly deadlines (28 October, 28 January, 28 April and 28 July). These contributions are in addition to the employees’ salaries and wages and must be calculated based on ordinary time earnings. Ordinary time earnings are generally what your employees earn for their ordinary hours of work.

If employers make a payment after the cut-off date, they must lodge a *Superannuation guarantee charge statement - quarterly* (NAT 9599) and pay a super guarantee charge to the ATO, penalties apply if they fail to comply. Employers cannot claim the super guarantee charge as a tax deduction, however, contributions that are paid on time are tax deductible.

If employers have made a late contribution to a super fund for an employee, they may be able to offset that payment against the amount of super guarantee charge they had to pay for the employee for that period.

The ATO has a range of publications, tools and calculators to help employers understand and meet their super obligations.

Visit www.ato.gov.au/employersuper for more information or call **13 10 20** between 8.00am and 6.00pm, Monday to Friday.

- › Integrates replenishment, purchasing and forecasting processes
- › Reduces error at each node in the supply chain, and
- › Coordinates management control with greater precision and less effort.

In summary, a Bottom-up supply chain planning methodology creates opportunities to:

- › Employ true DRP,
- › Optimise service levels and costs,
- › Adapt operational plans to different future scenarios,
- › Manage seasonal, erratic and promotional demand patterns, and
- › Provide more flexibility in managing to each stores' own sales patterns.

STORE LEVEL FORECASTING

The above are all worthwhile outcomes. Their attainment, however, requires a solid implementation approach that delivers a combination of an appropriate planning system and a well-designed business process tailored to the retail environment.

It is the characteristics typical to retail businesses that drive many of the system and process requirements. These characteristics include:

- › High Stock Keeping Unit (SKU) counts often with a long “tail” of products,
- › Large numbers of stocking locations,
- › Stock presentation requirements in stores,
- › The impact of “out of stocks” on sales history data,
- › Frequent and numerous small volume transactions,
- › Short product life cycles,
- › Seasonal and / or erratic sales patterns, and
- › Significant and frequent promotional activity.

As a result of these characteristics, the emphasis on planning system capabilities and business process structure can differ widely to other industries (which often have a longer tradition of using such demand planning approaches, such as manufacturing and distribution).

SYSTEM CAPABILITIES

On the system requirements side, a store level retail demand planning systems should:

- › Use a sophisticated automated forecasting system requiring minimum user input to configure and maintain,

- › Have the capacity to store, transfer and process large data volumes quickly,
- › Enable significant amounts of “market intelligence” to be incorporated into plans e.g. promotional planning,
- › Utilise a range of forecast algorithms suited to the wide variety of demand patterns experienced in retail,
- › Incorporate an intelligent performance reporting framework, and
- › Support a “by exception” approach to demand planning management (the larger the product range and number of stocking locations, the more critical this element becomes).

PROCESS DESIGN

Process should focus on maximising profitability and achieving the stated customer service promise. When initially developing a demand planning process, it is important to guard against a tendency to concentrate on forecast precision at the expense of other considerations.

Store level retail demand planning processes should:

- › Sync seamlessly with purchasing and replenishment activity, and have a traceable and auditable impact on these activities and associated inventory policies,
- › Be cognisant of the “80/20 rule” (or even a “95/5” rule that can be more appropriate for some businesses with “long tails”) and focus activity on the highest value adding activities,
- › Forecast exception management techniques should allow planners to target (a) questionable forecasts and (b) focus on high value / critical lines.
- › Consider the suitability of aggregate level forecast management in circumstances of mass promotional activity and, if implemented, proportionately apply aggregate adjustments to the store level forecast,
- › Cover all the key retail demand planning activities, including Out of Stock history adjustments, promotional planning, statistical forecast review, new product introduction and forecast accuracy reviews, and
- › Include a combination of outcome KPIs (measuring the results of activities, such as forecast accuracy and service levels) and process KPIs (measuring the execution of processes, such as the number of forecast adjustments performed). KPIs should relate to stated business objectives.

Listing the requirements for a retail demand planning system and process is one thing; finding a suitably equipped Bottom-up demand planning system and developing a process tailored to a retailer's needs is a much greater challenge. It is eminently possible however, as a number of retailers in the vanguard of this approach demonstrate, and the potential rewards are significant.

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