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Optimizing Retail Allocation:
10 Must-Have Capabilities

WHITE PAPER

Optimizing Retail Allocation:

10 Must-Have Capabilities

Superior retail allocation from DC to store door requires the right resources

Executive Summary

As a retail allocator, you have the merchandise, but can you place every single item in the best possible retail location at the exact time to achieve lowest possible cost, minimal markdown and maximum profit? Whether it is a specific style/color/size in a store for next Friday, controlling the amount of back-stock in a DC, reserving units for a catalog based on drop date and unit projection, or planning for the next online campaign, automating and optimizing your allocation strategy can make or break your ability to compete.

Data-driven merchandising and assortment plans should be enhanced by automated, on-target allocation strategies. A smart, flexible retail allocation process needs a highly capable software to model multiple business services. Solutions come in many shapes and sizes, sourced from best-of-breed software vendors, ERP system providers, or internal IT departments.

Regardless of the origin, there are several "must-have" capabilities your allocation solution absolutely should include. This paper outlines 10 essential elements for optimal retail allocation performance.

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Leading retail organizations that leverage key analytics balance inventory and deliver a 96% in-stock performance versus only 67% in-stock performance by followers.

—Aberdeen Group, March 2014

A Crucial Retail Competency

30% of merchandisers have up-to-date technology in place for allocation. Another 11% are in the process of upgrading their technology.[1]

...Which leaves 59% facing the question "Are we falling behind in the allocation race?"

Merchandise allocation is a crucial competency for retailers across all retail business models, including specialty, department store, discount and mass merchant, as well as vertically integrated retailer/manufacturers. The process seeks to assign optimal individual item quantities to specific stores as well as direct-to-consumer channels (ecommerce and catalog). Retailers today don't think in terms of the store competing with online; they think in terms of the store integrating online. Allocation must place the same merchandise online and in-store.

That is where a smart, automated allocation system comes in. Mathematical algorithms can be used to tailor allocation store-by-store, channeling the flow of stock according to factors such as available selling space and store sales performance to ensure the right blend of items, styles, colors and sizes are provided while avoiding overstock and out-of-stock conditions.

By reducing costs and aligning inventory with each store's opportunity to sell, a retail allocation solution minimizes the time required to accurately allocate product and maximizes profit. To dramatically reduce markdowns and inventory carrying costs, the allocation system must provide methods for demand forecasting and distribution across a wide variety of product types using multiple sets of allocation rules and logic. The system should employ analytical methods that can automate the allocation effort based on available sales histories and potential performance at different individual stores and across direct-to-consumer channels.

What are the key allocation capabilities you need to increase your team's productivity and your merchandise profitability? Let's take a look.

[1]2014 Annual Retail Technology Study, RIS News, March 2014

"Put the right quantity of the right product in the right location for the right price at the right time."
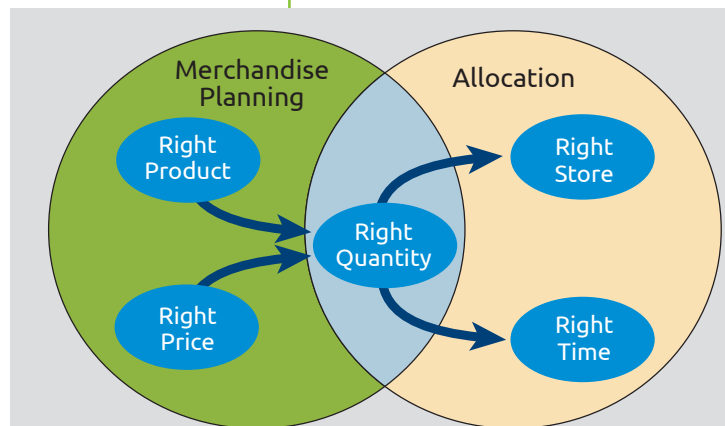
What could be simpler?

Figure 1. Retail allocation meshes with merchandise planning

Ten Keys to Successful Retail Allocation

1. Plan High, Allocate Low

The issue: Retail organizations tend to perform merchandise planning at high levels such as department/chain/month for key variables such as inventory dollars, sales dollars and gross margin. But allocation occurs at a lower level along three dimensions:

- **Product:** item, style, sub-class, class, department, division, channel, company
- **Location:** store, district, region, division, banner, chain, channel
- **Time:** week, month, quarter, season, year

The challenge: Manually plan down to the item/store/week level. This is challenging because of the sheer number of combinations requiring review and action. To optimize results, your allocation effort must excel at the item location level.

The "must-have:" A retail allocation solution must automatically spread changes made at higher planning levels down to individual items, locations and times. The system must also aggregate lower level changes up the hierarchies.

One more thing: You need to incorporate store-specific trended projections and individual store size needs. Building accurate store-level size curves is tricky; it helps to have advanced algorithms that know how to factor selling patterns and out-of-stocks into the calculations and roll everything up to higher level plans.

> Merchants shouldn't be data managers. Retailers are trying to automate the thinking of their best merchants so those merchants can be freed up for other valuable work.

Automated store planning/allocation/replenishment

+

Increased store planning accuracy

+

Increased allocation algorithm accuracy

+

Ease of Use

=

Improved Inventory balance
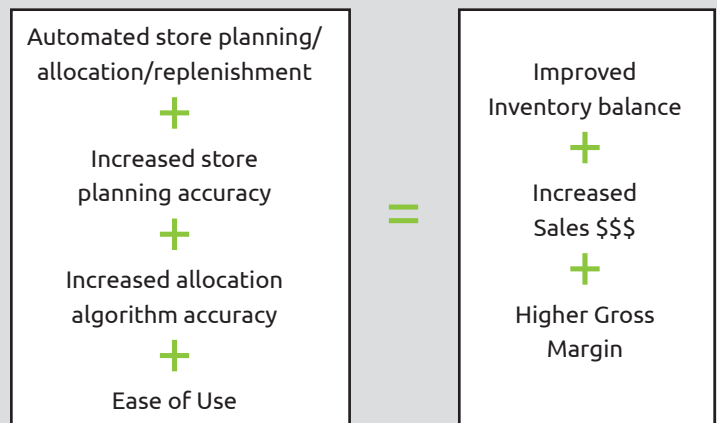
+

Increased Sales $$$

+

Higher Gross Margin

Figure 2. Retail allocation formula for success

2. Handle Uncertainty

The issue: Retail merchandise allocation can be a daunting process when the items are marked by rapidly up-trending and down-trending seasonal and fashion-driven demand, subject to localized demand variations, or lacking a prior sales history (e.g. new item introductions). Uncertainty reigns.

The challenge: Allocate items optimally, despite realities such as:

- **No history for item**
  Unknown sales pattern, no demand history exists on which to base a forecast
- **No history for store**
  New store, uncertain performance characteristics
- **Heavily price-promoted, short life cycles**
  Quick-moving trends and pricing changes demand outstanding reaction times

The "must-have:" Your allocations must be completely responsive to short-term trends at a micro-level. You need the ability to project each item's performance by modeling it on existing items, relevant item groups or categories, using their mean or median sales numbers. Make sure you can easily combine automation with manual input for maximum customization.

One more thing: In addition to keeping you in tune with local customer demand, the system must allow you to manage stores at the group or individual level using unlimited attributes and customizable hierarchy definitions. When modeling projected demand for a new store, the system must go beyond the ability to pick one other store as a basis for the new store history. You must be able to use the average of a group of stores, and assign a start and stop date for applying that history.

Consumers demand the flexibility to buy anywhere, take delivery at stores or at home, and return items in person or by mail.

Figure 3. Modeling future allocations on existing sales histories
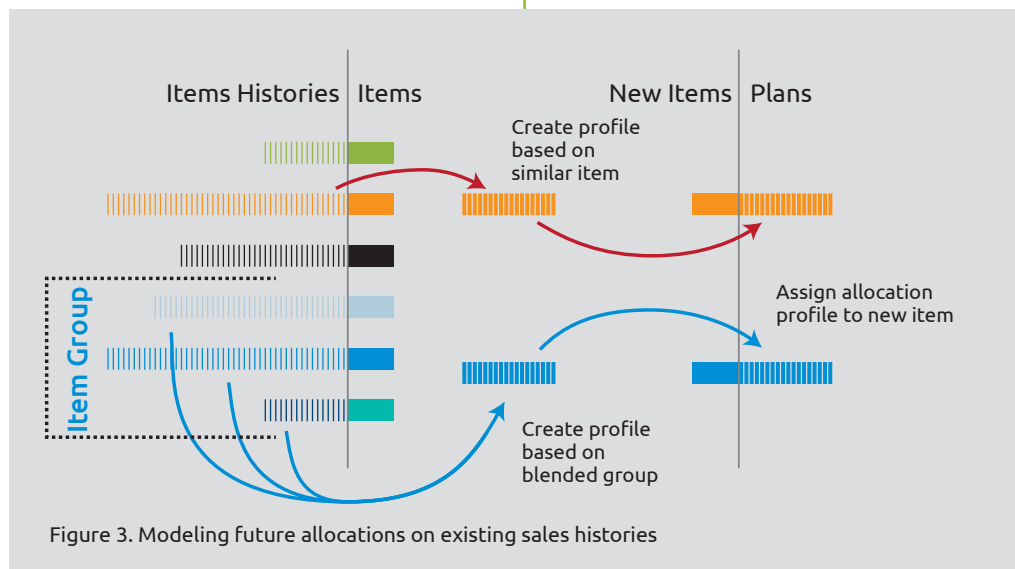
3. Automate, Automate, Automate (Leverage Rules and Workflows)

The issue: Most retail planning and allocation teams find it difficult to stay focused on areas where their expertise is needed most. Running the allocation process manually involves a vast number of repetitive tasks, and constantly revisiting a large portfolio of SKUs and stores.

The challenge: Develop an optimal allocation step-by-step, then shift into a schedule-and-automate mode wherein repeatable processes are executed reliably across the entire merchandise landscape.

The "must-have:" An allocation system should provide powerful, yet easy-to-configure automated workflows that eliminate repetitive user system interactions.

The key is to work with a powerful rules engine that is flexible enough to automate your unique allocation process, yet "usable" enough to free up many hours of allocator time. For example, a merchandiser may develop sales projections by store for the initial eight weeks of a season using a percent contribution calculation, then shift to a trend calculation. These rules must be easy to define and schedule in the allocation system.

Additional rules (for example, allocating items based on calculating open to ship at the future time of receipt) should be easy to create and assign when the purchase order is written. Another example: replenish twice a week from back stock to bring all stores up to five weeks of supply, based on current selling.

Allocation and replenishment rules should be assignable to a group of items at any level in the merchandise hierarchy by simply highlighting items, attaching the rule, and clicking on a command button.

One more thing: Allocation parameters should be controlled hierarchically. A rule created at one level (e.g. department) should be "inherited" by its lower level classes, sub-classes, etc. If eligibility parameters differ for one sub-class, then only that sub-class should require individual attention.

Retailers should look at their merchandise planning, forecasting, and allocation efforts as drivers of innovation.

4. Manage by Exception

The issue: When it comes to making the best use of their time, allocators face a very tough situation. Simply failing to focus on the highest-value tasks and decisions invariably causes out-of-stocks that create dissatisfied customers and mark-downs that lead to eroded margins.

The challenge: Focus only on the conflicts or conditions that require expert attention, then navigate to the highest priority issues first—for example, a style-size that is stocking out on the ecommerce channel but overstocked in the Southeast region. Allocators who must manually wade through every store plan and SKU-location looking for issues may not be able to take timely corrective action.

The "must-have:" Exception filters draw attention to high-priority problem areas so they can be addressed before routine activities. The retail allocation system must provide the ability to set up a range of constraints and business rules that reflect exactly how your unique enterprise operates. For example, an exception filter might:

- Display stores whose sales for a selected time period was 20% or more above average, and whose inventory was 10% or more below average
- Notify an allocator when an allocation is defined that exceeds store unit capacity, and immediately correct the situation

"Leading retail organizations that leverage key analytics balance inventory and deliver a 96% in-stock performance versus only 67% in-stock performance by followers."
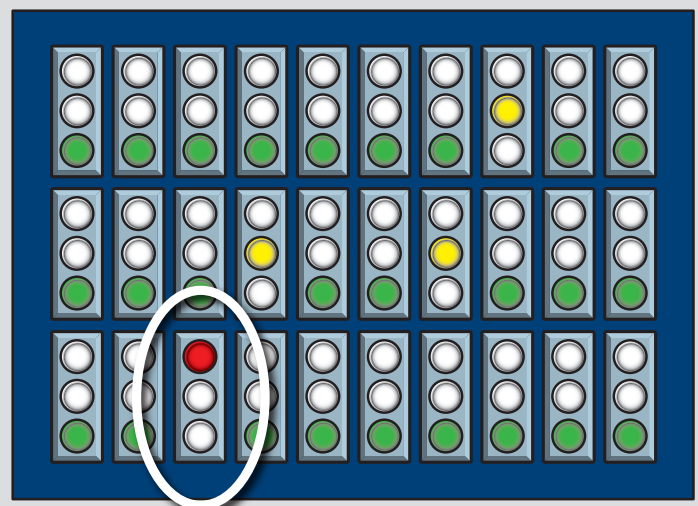
— Aberdeen Group, March 2014

Figure 4. Exception alerts focus planners on problems

5. "What-If" Scenarios

The issue: It is often impossible to anticipate the different outcomes from implementing one stock or sales plan versus another. Manually generating multiple plans and comparing their effectiveness is too labor- and time intensive, so most allocators use an approach they are comfortable with, though not necessarily the optimal one.

The challenge: Explore a range of alternative retail planning and allocation scenarios quickly. Set parameters and run calculations to hone in on the best option going forward. Is it better to mark down men's cashmere V-neck sweaters now or wait to liquidate them later? What happens to sales volume at various price reduction levels? How much revenue must new merchandise drive in order to keep us on plan?

The "must-have:" Use your allocation system to generate "what-if" scenario analyses. Superior allocation systems offer facilities to model different rules and parameters and generate alternative sales and stock plans without IT department involvement. Be rigorous about the technology you choose: for agile decision-making, the store plans must be calculated immediately (at the click of a button) so that multiple versions can be easily compared and the best option for driving allocation and replenishment processes identified.

An advanced merchandise planning and allocation infrastructure enables analysis and action along the entire merchandise hierarchy.

6. Store Smoothing

The issue: New stores, renovated stores, and stores that have experienced anomalous sales activity all suffer from a lack of solid information on which to base initial stock or re-stock allocations. In addition, items and merchandise categories with "low and lumpy" sales patterns or very short life cycles often exhibit random data distortions at the individual store level.

The challenge: Generate optimal allocations when existing data relevant to a single store is severely limited.

The "must-have:" The concept of "store smoothing" should be built into your allocation system. When faced with a store having limited data, you should easily be able to use the average sales value for all stores in its plan level. You should, for example, be able to specify that for a designated time period no store with the "warm climate" attribute can be planned to have less than X or more than Y units of particular classes of merchandise.

One more thing: There are areas where you need to avoid "involuntary smoothing." For instance, make sure your allocation system supports development of sales and stock plans by the week, rather than simply dividing a monthly plan by four or five.

Allocation teams must make customers happy and support the merchandise plan's financial targets.

Figure 5. Leveraging similar store profiles as an allocation model for stores with no history
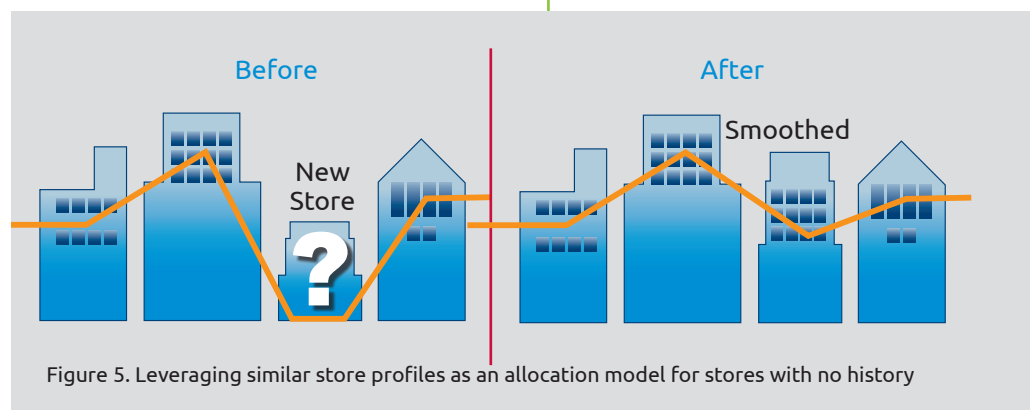
7. Store Capacities and Virtual Warehousing

The issue: For small footprint/high volume locations (often metro stores) there are severe fixture and space constraints, units per square foot density requirements and maximum inventory rules. It may be physically impossible to place enough stock on site at one time to achieve the desired allocation.

The challenge: Divide the allocation into phases and stages. Automate and execute more frequent stock shipments from DC to store to maintain the optimal allocation despite capacity constraints.

The "must-have:" The allocation system must explicitly recognize store unit capacity as a constraint in calculations (unit capacity should be defined at any level in the merchandise hierarchy).

A "virtual warehousing" capability can allow allocation to the store as if there were no capacity limitations, by reserving store-specific merchandise in the DC, then automatically executing replenishment shipments to the store on an as-needed basis.

One more thing: It is best to have this allocate-without-shipping capability built in to the "out of the box" allocation system. An exception alert should be triggered if the store capacity limit is approached during the allocation process.

Advanced allocation systems help ecommerce, catalog, online and even outlet stores work together better by modeling all channels in the allocation mix, each with its own volume characteristics.
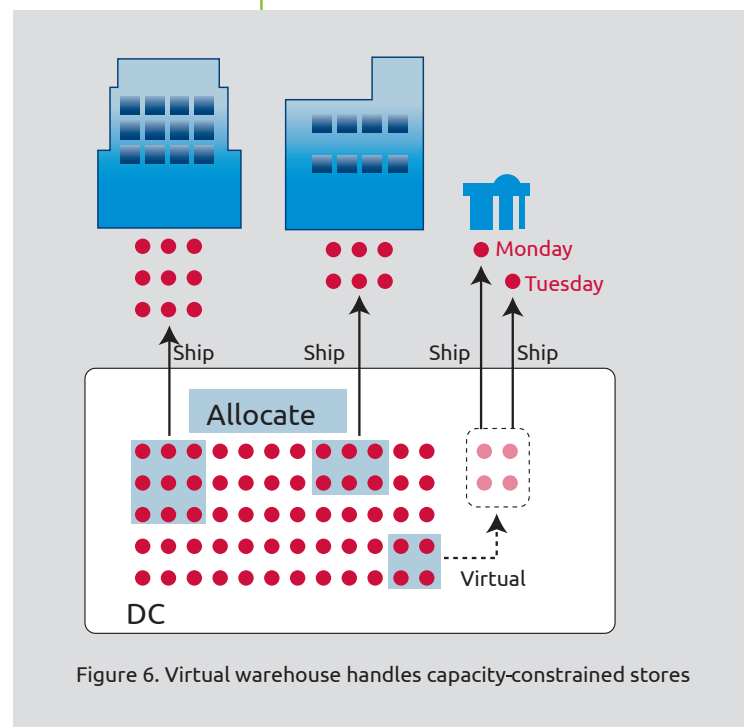

Figure 6. Virtual warehouse handles capacity-constrained stores

8. Store-Specific Lead Times and Daily Plans

The issue: During peak selling times, daily sales contribution may vary significantly from store to store. In addition, individual stores have different picking schedules and varied delivery lead times. It may take one day to move merchandise from the DC to store A, but seven days to supply store B. Percent need calculations that do not take this variation into account can create a stock imbalance of up to 30%.

The challenge: Create allocations that project relative store needs based on each store's expected future receipt date. Plans built on a weekly or longer time horizon may work at the class and sub-class level, but are not a granular enough to handle variations in pick schedules and transit lead times.

The "must-have:" Key items (which must be in stock at every single store) should be planned, forecasted, and allocated at the daily level. The system must support daily sales and stock plans by store. Allocators can define a "ship up to quantity" or a "ship up to weeks of supply" rule. The system takes in sales and inventory data and applies automated workflows to execute an optimal allocation strategy without manual intervention—but must provide the flexibility to balance full automation for some flows with varying degrees of manual involvement as needed in others.

Merchandisers must break down internal walls and treat all channels—store, catalog call center, online—as components of one holistic customer relationship.

9. Date Range-Driven Store Eligibility

The issue: Seasonality, holiday periods and promotional schedules all conspire to alter how different stores should be planned across the calendar year. Shorts might only be carried in Maine stores from April to July, but can be part of the Florida assortment year round.

The challenge: Manage time windows for individual stores or store groups in order to align allocations with real-world eligibility constraints.

The "must-have:" The system must provide practical date range controls that let allocators designate when each store is eligible to carry certain merchandise. This capability underpins the rules-based workflows, and also alters the mathematical calculations performed by the allocation engine.

10. Weekly Percent Need Calculation

The issue: Stores have varying weekly sales patterns. When inventory at the DC is not sufficient to meet all replenishment needs, high volume stores may demand numerically more units than low volume stores. This imbalance causes allocations to favor big stores while small locations suffer disproportionately from shortages and stock-outs.

The challenge: Allocate to both high volume and low volume stores in the most equitable fashion, factoring in each store's expected future receipt date to account for store-specific shipping transit times.

The "must-have:" An advanced allocation system should perform initial allocations to stores using "percent need" calculations based on weekly sales and stock plans. The system should also allow profitability to be factored in, as well as trend analyses. This results in a much more tightly controlled flow of merchandise to the stores.

Optimal allocations "level the playing field" to give stores with varying characteristics an equal chance to excel.

Conclusion

Retail allocation strategies come in many shapes and sizes, but regardless of your approach, your allocation solution should be able to handle planning and distribution of a wide variety of product types using multiple sets of allocation rules and logic. Leading merchandisers employ analytical methods to model their channels and automate allocation based on sales histories, trend analysis and demand sensing across SKUs and stores, from the class/chain level down to individual item/location. As always, the devil is in the details, and your "must-have" retail allocation capabilities include:

- **Plan High, Allocate Low**

  Automate planning down to the item/store/week level; spread high level changes to granular levels and aggregate lower level changes up.

- **Handle Uncertainty**

  Model item performance against similar items and categories that have historical data. Be responsive to short-term trends at a micro-level.

- **Automate, Automate, Automate**

  Ensure your rules and workflow engine are flexible enough to automate your specific processes and user-friendly enough to free up precious labor hours.

- **Manage by Exception**

  Automatically alert allocators so they can focus on the conflicts or conditions that must be proactively managed.

- **"What-If" Analysis**

  Model rules and parameters to generate alternative sales and stock plans; compare multiple scenarios quickly and easily.

- **Store Smoothing**

  Substitute values using similar stores or groups of stores as a model when single store data is limited.

- **Store Capacities and Virtual Warehousing**

  Automate an "allocate once, ship as needed" strategy from DCs to capacity-constrained stores.

- **Store-Specific Lead Times and Daily Plans**

  Create daily sales and stock plans by store to capture granular variations. Calculate store needs based on each store's expected future receipt date.

- **Date Range-Driven Store Eligibility**

  Designate time windows when each store is permitted to carry certain merchandise.

- **Weekly Percent Need Calculation**

  Allocate equitably to high volume and low volume stores, factoring in store-specific transit times.

About Logility

With more than 1,250 customers worldwide, Logility is a leading provider of collaborative supply chain optimization and advanced retail planning solutions that help small, medium, large, and Fortune 500 companies realize substantial bottom-line results in record time.

Logility Voyager Solutions™ is a complete supply chain management and retail optimization solution that features a performance monitoring architecture and provides supply chain visibility; demand, inventory and replenishment planning; sales and operations planning (S&OP); integrated business planning (IBP); supply and inventory optimization; manufacturing planning and scheduling; retail merchandise planning, assortment and allocation; and transportation planning and management.

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