Q WHITE PAPER //

WHY ALLOCATION AND REPLENISHMENT FIRST?

In today's ever changing retail landscape, why would you consider new capabilities in an area you already have solutions for? In this paper we'll look at the two key reasons you should make your next technology investment advanced inventory optimization. We will show how those capabilities help impact the quality of demand fulfillment (allocation and replenishment), and how these solutions maximize the profitability of your inventory while also enhancing some of the other higher profile technology investments many retailers have recently made.

QUANTUM RETAIL TECHNOLOGY

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INTRODUCTION

"It's easy for retailers to be complacent with fulfillment technologies since there's been something that's considered 'good enough' for years. Often overlooked is the degree of top and bottom line opportunity avialble in allocation and replenishment technologies when compared to other potential technology investments."

Greg Wilson
Vice President Field Strategy, Quantum Retail

WHY ALLOCATION AND REPLENISHMENT FIRST?

When it comes to the Profitability of your Business, is good enough, enough?

There is a profound difference between performing adequately versus performing optimally. When we discuss the capabilities of the solutions built on Quantum's Q platform we're sometimes met with metaphors like "What you're describing is a Ferrari and what we're looking for is a Toyota Corolla."

This misses the point completely when considering the challenges of today's retail environment. If we compare using legacy allocation or replenishment solutions (most of which have their roots in 80's technology and business constrained environments) to the capability of a well architected inventory optimization solution such as Q, a more realistic analogy for a working family in the suburbs would be "You need a car and you're riding a bicycle." Both are modes of transportation, but only the car can service the needs of the family.

Traditional solutions were built with the limitations of processing and data management of the era in mind. Today's technology doesn't have those limitations. Retailers can now capture an array of real time data that can immediately be factored into better inventory and overall supply chain decisions.

Advancements in applying science based analytics to retail environments have enabled us to remove much of the volatility associated with decisions driven by human intuition. Instead we can now drive them through real world observations of behavior at a detail level not feasible with manual or human

reliant processes. Solutions such as Q self-monitor and continuously learn from the results that their recommendations produce, which continually improves their performance. Compare this to traditional systems that – even if tuned to perfection – begin to erode in quality immediately following configuration due to their dependence on external guidance, such as seasonality profiles of historical sales data groupings.

When Q is deployed in environments that are using the latest versions of traditional systems, it generates 2-5% increases in sales and profitability. These results have been measured empirically by test vs. control groups rather than subjective observations common in evaluating.

While there is a flurry of activity in developing new omnichannel related capabilities and similar initiatives, there's reason to evaluate and consider how you will most profitably fulfill the demand that you're generating, either along with or before making an aggressive move into those areas.

Following are some key things to think about:

The last chance to get it right
If you make the perfect assortment choices, and even create the ideal orders to DCs, a poor allocation can still irreparably damage the results you get. If, however, you make fairly good decisions on assortment and ordering (which is common since there are fewer choices being made and therefore more thought going into each) an improved allocation can make the best of what you ultimately end up with. These improvements, if done well, can almost always have more impact than changes to ordering and assorting. This frequently generates enough return to fund investment in the other two areas as time permits and as your business can absorb the change.

Setting customers up for disappointment
If we invest in new mechanisms to market to customers and incremental avenues in generating demand there's obvious benefit. The only exception is if that demand isn't captured. Disappointing customers is increasingly expensive in today's environment of minimal consumer loyalty. Enabling fulfillment from multiple locations (national DC's, local DCs, stores, etc.) can assist, but can also be very costly if the inventory availability is consistently in sub optimal locations. To compete with today's crop of e-commerce competitors we need to make those decisions thoughtfully and place inventory with an eye toward profitability.

Numbers – largest opportunity
To put this in perspective, let's compare the three major components of merchandising. We'll use a retailer with a range of fashion and basic merchandise offerings having 3 distribution centers (DCs) and 500 stores as an example. Different environments see the following activities in different ways, but for the purpose of this example I've broken them into assorting, ordering and allocating as defined below.

> **Assortment planning (10 decisions) –** Defined for purposes of this discussion as determining what products to offer our customer, we generally have one major objective. That is to determine what products to buy or not buy. If we include decisions around ranging (what stores get the products we select) then we also make this choice for stores. In virtually all fashion environments, stores are combined into clusters / volumes or some similar groupings. If we assume 10 of these groups then we're making 10 'include or exclude' decisions per product.

Ordering (12 decisions) – Defined as determining how many of the items selected in assortment planning should be shipped to a warehouse or DC. Here we're making the same number of decisions as we have DCs. This is multiplied by the number of receipts we plan. In an environment with 1/3 of product being one shot, 1/3 being 2 shots and 1/3 being ongoing basics we may have an average of say 4 receipts per product. If we have 3 DCs that's a dozen decisions per product (3 * 4 = 12).

Allocation (2,000 decisions) – Defined as determining how much available inventory goes to each store. Here we also have decisions to make for each receipt. If we use the average of 4 receipts from above we need to make a store specific choice for each store for each of those receipts. In a chain with 500 stores we're now talking about 2,000 decisions (500 * 4 = 2,000). In the case of direct to store ordering, generally allocation is combining the ordering and allocation steps.

Bottom line, there are many more decisions in the process of allocation than in ordering and assorting. Obviously there are multiple dimensions of things to consider for each activity, but ultimately allocation has more instances for good decisions to be helpful, or perhaps more importantly, for bad decisions to be detrimental.

OPTIMIZE OR REPLACE?

While wholesale replacement of fulfillment capabilities will likely deliver the best results it's far from the only option. If you have made recent investments in fulfillment technology but aren't getting the results you need - or if you're working with dated capabilities but struggle to prioritize investment in the required solution and architecture changes, optimizing existing capabilities is an option.

Because Quantum's Q solution is built on an analytics platform and weaves multiple analytical components together to enable allocation, replenishment and order optimization, these components can be "turned on" in whatever combination is required to get the desired outcome. This enables Q to work in conjunction with existing solutions and feed optimized results into existing, familiar processes and systems. This enables retailers to get the immediate benefits with reduced implementation time (by using existing data integration) and change management (by preserving existing business process).

CONCLUSION

Given the choice of all the potential areas to invest technology dollars, it can be difficult to consider an area where there's already a system in place as a priority. Even when replacing such technologies there is a temptation to move forward with an evolution of the traditional approaches that have been used in retail for over 40 years. The reality is that fulfillment capabilities leveraging modern technology and science have changed the approach completely, and for the better. The changes in customer behavior over the last 10 years require more insightful and responsive action than traditional allocation and replenishment solutions can provide.

Rather than guessing at criteria that we hope will achieve a reasonable result, we can now instruct the system to chase a goal such as maximizing profitability. It will continue to learn and evolve as it sees what actually happens and improve its decisions over time. Allocation has so much impact on the ultimate results retailers achieve that it's difficult to imagine it continuing to be a process relegated to entry level employees just out of school with no practical experience. Solutions such a Q address these problems head on and achieve improvements that make a direct impact on both top and bottom line as a result.

QUANTUM RETAIL SOLUTIONS

Quantum Retail offers an innovative approach to help retailers transform their retail data into actions and insights that both optimizes their business results and maximizes their inventory investments. Today, Quantum is already helping the world's most successful retailers improve customer satisfaction by:

>**Maximizing their high-value sales:** Quantum's comprehensive and granular responses to product demand give retailers a view to their consumers' behavior coupled with the ability to quickly act on that intelligence for more full-price sales.

>**Delivering the best brand experience across all of their channels**: Q continuously learns, dynamically analyzes and then responds to changes in demand for every product and channel to present shoppers with the items they want and where they want to buy them.

>**Getting the most from their retail experts:** Quantum's solutions offer maximum flexibility and usability with an intuitive product design to allow retailers to focus on other parts their business and their customers. Our exception-driven interface, with built-in business alerts and workflow strategies, provides both effectiveness and productivity in an easy-to-use solution.

>**Working with their existing environments**: Q is adaptable within the retailer's existing environment and works in conjunction with many of today's leading supply chain and merchandising platforms including Oracle, SAP and JDA.

Quantum Retail are the experts at combining deep retail and merchandising intelligence with a dynamic technology engine that adapts to a retailer's needs and makes changes based on how their customers are behaving. Q continuously learns and dynamically analyzes and responds to changes in demand for every product and store location to maximize value for retailers of all types. More information can be found on our website ***www.quantumretail.com***.