



# DIGITAL SHELF OPTIMIZATION

Optimization of the shelf opens up new opportunities in a post-omnichannel world where only one thing matters: customers. And today, customers are digital.



EVERSIGHT



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## Omnichannel Digital Imperatives Partner Companies

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DIGITAL SHELF OPTIMIZATION



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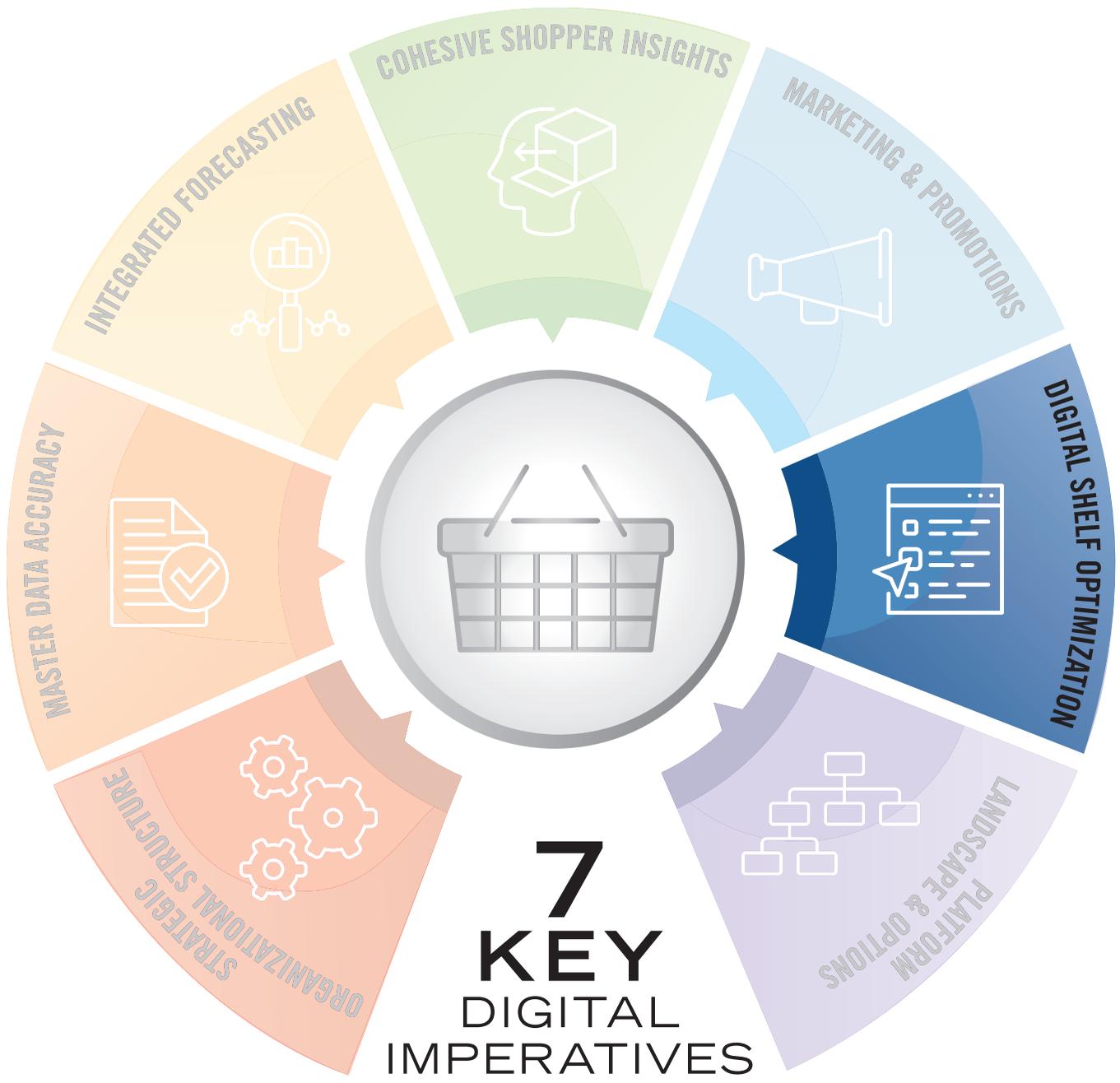
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INTEGRATED FORECASTING

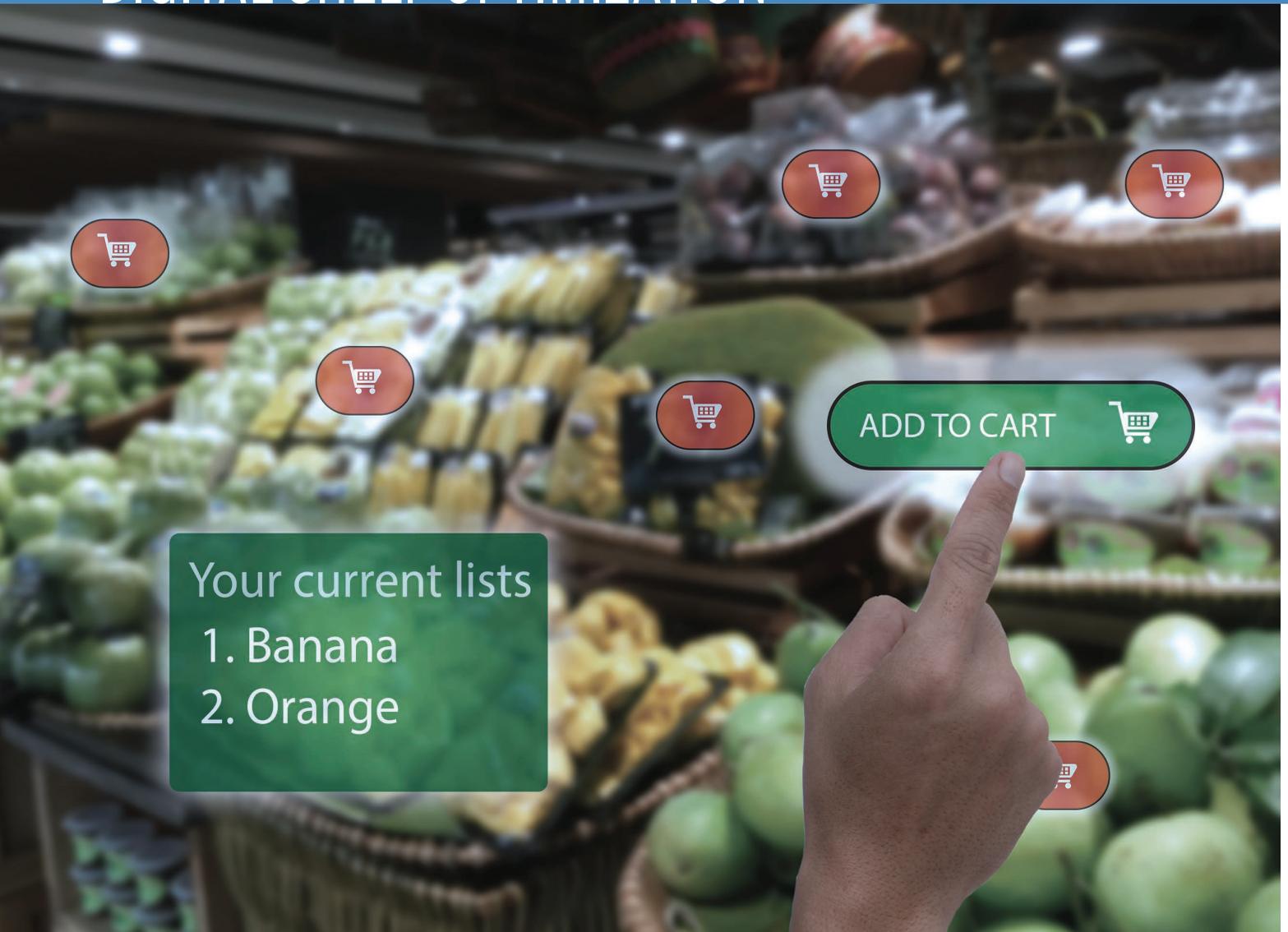


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# DIGITAL SHELF OPTIMIZATION



## DIGITAL SHELF OPTIMIZATION

*WHAT DIGITIZATION OF THE SHELF REALLY MEANS, AND WHAT STEPS PHYSICAL RETAIL NEEDS TO TAKE TO DELIVER IN THE POST-OMNICHANNEL FUTURE.*

**OPTIMIZATION OF THE SHELF** takes on new meaning and opens up new opportunities as digitally connected commerce becomes the norm. The digital shelf is becoming intimately smaller to fit the smartphone screen, but at the same time it is also infinitely larger and deeper than its physical counterpart, and far more dynamic.

**FIG 1:** The strategic, high-level roadmap for the implementation of digital shelf optimization capabilities

AI-POWERED PRICING SUITE: HIGH LEVEL IMPLEMENTATION ROADMAP



Source: Eversight, 2019

*The strategic roadmap describes the steps physical retailers can take to deliver customers a valuable, seamless experience in this post-omnichannel world. The roadmap starts with a strategic re-think to make sense of all the current changes, opportunities, and risks, and puts them into context. It continues with hands-on implementation guidance for retailers, regardless of their current store size, regional coverage, or level of digital sophistication.*

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## PART 1: RETHINKING RETAIL IN A POST-OMNICHANNEL WORLD

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“Omnichannel” has been a buzzword in retail for several years, and with good reason. It encouraged retailers to adopt strategies to connect with shoppers across both physical and digital touchpoints and follow them along their paths to purchase. These strategies have increased the probability of a sale, both online and offline.

Today, however, the lines between channels continue to blur. Online, offline, mobile, e-commerce, m-commerce, brick-and-mortar – these terms have become interconnected and in some cases inseparable. Brands that still think of e-commerce as a channel solely in discrete, compartmentalized terms risk being left behind as the digital shelf evolves.

It won't be the competitors who leave these brands behind. It will be the shoppers.

We have entered a post-omnichannel world where only one thing matters: customers. And today, customers are digital.

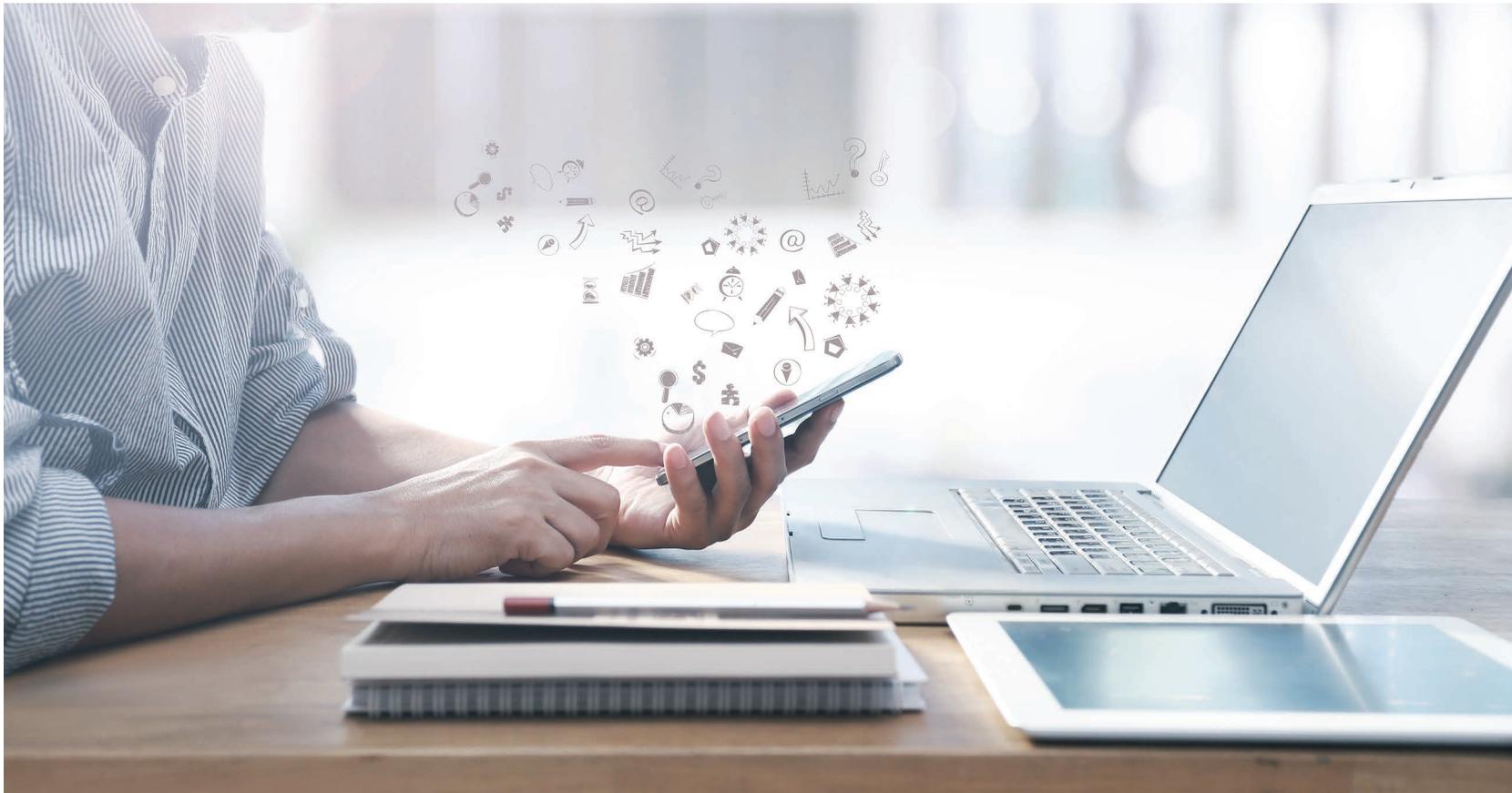
### DEFINING DIGITIZATION AND THE DIGITAL SHELF

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Shoppers expect one seamless experience. It doesn't matter whether they are in the store comparing options on their phone, browsing on a tablet from their couch, asking their voice-activated home assistant for help, or interacting with their car dashboard. And they don't care what that experience is called. This is a world, for example, where a retailer can test promotions via a proprietary app, then implement the most promising promotions online and in-store in order to drive across-the-board improvement: net sales, unit sales, household engagement, and margin.

For example, a regional mass retailer witnessed first-hand how lucrative these opportunities are. Using an offer innovation suite to test promotions, the retailer uncovered the best-performing offers among over 15,000 campaigns across 1,500 product categories (*See Case 1: Winning Promotions, page 16*).

These results underscore the difference between the digital shelf in an omnichannel world vs. a post-omnichannel one. The



powerful leverage comes from integrating all channels, rather than merely being present in them. It enables the retailer to drive significant improvement in all aspects of its interactions with customers, from assortment to search, and from pricing to promotions. Part 2 of the roadmap focuses on the steps a retailer takes to achieve the results we just described, starting with price optimization and then moving on progressively to full-scale promotion optimization.

The strategic re-think described in this section marks the next step beyond “omnichannel,” which calls for an attractive and active presence in all channels. The new mandate is seamless integration across all channels, not merely presence. There is a false equivalency that digital influence correlates with the level of online sales. The digital influence on path-to-purchase continues to increase at a much faster rate than online sales, which explains why the vast majority of a food and grocery retailer’s sales (Amazon excepted) still take place in a brick-and-mortar store. Nonetheless, most of these sales also involve a digital asset.

In other words, optimizing the “Digital Shelf” means unifying diverse shelves into one seamless experience that makes

the most sense to shoppers and generates optimal sales, engagement, and profit for the retailer. The first step in the roadmap is a deeper examination of the unique benefits and drawbacks of today’s distinct shelves, how each plays a new role in a digitally connected world, and how that applies to the individual retailer’s opportunities and challenges. The shelf on the desktop monitor, the shelf viewed on a smartphone, and the shelf as a physical medium all have their strengths and weakness. Physical shelves deserve particular emphasis, because they are still involved in the overwhelming majority of digital purchases and have the unassailable value proposition of tangibility.

## QUALITIES OF A ‘DIGITAL SHELF’

The evolution of the planogram tells the story of the evolution of the digital shelf. The traditional planogram for the brick-and-mortar store represents the best compromise across brands, package size, price, the needs of customer segments, and the shelf’s limited space for display and stock. These constraints mean that the traditional physical shelf is neither intimate, nor infinite, nor very dynamic.

# DIGITAL SHELF OPTIMIZATION



*THE DIGITAL  
IN-STORE SHELF  
IS RAPIDLY  
BECOMING BOTH  
DYNAMIC AND  
PERSONAL.*

Digital alters that perspective from the customer's viewpoint, and the retailers need to follow suit. In the post-omnichannel world, the planogram is personal. The digital shelf is no longer limited by space or other constraints, which means that the optimized digital shelf is dynamic, infinitely larger, and intimately smaller all at the same time. It stocks everything, yet displays only what the customer needs or wants (explicitly or implicitly) at any given time or occasion. Optimizing these forms of expression is what will make a planogram personal. It also drives the convergence of marketing and sales, thanks to text messaging and QR code-based commerce.

## THE "DYNAMIC" DIGITAL SHELF

No shopping experience is truly static, because an individual shopper's desires can change at any given moment. Different consumers will experience a shelf or screen permutation differently, and the same consumer will have different perceptions of the same permutation depending on time, mood, occasion, and many other factors. This does not mean, however, that shoppers have become hopelessly fickle or unpredictable. In fact, it is possible to observe important patterns in consumer behavior, especially with the help of AI-powered software. Some of these may seem counter-intuitive at first glance, and would be nearly impossible to discern reliably with conventional analyses or gut feel.

Once a retailer can observe these patterns, a wide range of options are available not only to respond dynamically to

shopper behavior, but also guide or nudge it. The physical shelf, where the bulk of purchases still takes place, plays an essential role. In a post-omnichannel world, why can't the shelf in a physical store serve as another important personal "screen," no different than the phone, tablet, or PC a shopper may use?

In fact, the digital in-store shelf is rapidly becoming both dynamic and personal. This unlocks the potential for personalized pricing and promotions and real-time A/B testing. Given the flexibility, immediate feedback, and proven effectiveness of AI-powered promotions testing, A/B testing at shelf in real-time becomes a standard practice in retail, rather than a supplement to other forms of testing or research. The days of simple one-way communication at shelf via paper price tags are rapidly ending, replaced by a shelf which is potentially as interactive, informative, and communicative as any other connected device. One retailer's price tests demonstrate how AI-powered experimentation can uncover dangerous price thresholds and unexpected profit opportunities which conventional methods of price-curve estimation (such as best-fit regression analysis) would overlook. (See *Case 2: Winning Promotions*, page 16).

Several other companies have undertaken important steps to realize this vision and turn the physical retail shelf into a platform which integrates price, promotion, and advertising. Vestcom offers Integrated Shelf-Edge Marketing Ads (ISMAds), which incorporate brand or promotional messages into full-color retail price labels.<sup>1</sup> Kroger has introduced EDGE (Enhanced Display for Grocery Environment), which transforms the display of product and price information at shelf into a video display analogous to the ever-changing banners one might see at a sports stadium. Powered by Microsoft's Azure, the system currently allows Kroger to use dynamic pricing and promotions and incorporate advertising at shelves in 120 of its stores.<sup>2</sup> "It brings the information richness of the internet to the sights, sounds, touch and feel of retail," according to Brett Bonner, Kroger's vice president of research and development.

Eversight has partnered with a worldwide leader in smart digital labels and pricing automation, to enable retailers to dynamically update prices based on real-time data, bringing intelligence to the shelf.<sup>3</sup> This works because an AI-powered process enables continuous learning and testing at shelf.

These examples represent first steps toward making the physical shelf an integral part of the shopper's seamless interconnected experience. But it begs additional questions: what will they see, and how will they see it?

## THE "INFINITE" LARGER SHELF AND THE "INTIMATE" SMALLER SHELF

Think of the possibilities for the personal planogram.

The best case would have several aspects. First, the digital shelf is infinitely larger than the physical shelf, in that it has no theoretical limit. It can make a retailer's entire assortment accessible and available virtually on a screen, regardless of where the shopper is. What differs is how that access and availability are expressed. In a physical store, the shopper may see and touch Product A at shelf, but can then put her phone over a QR code to discover different flavor variants, package sizes, complementary products, or special products. She could also place an order for back-ordered merchandise. On any device or screen, the retailer has the ability to surface the best matches for the product a shopper is searching for, taking advantage of the retailer's full assortment. Any conceivable product a retailer stocks or has access to can appear before the shopper's eyes, ready for purchase.

Second, the digital shelf is intimately smaller than the physical shelf. Without the peripheral vision afforded by a physical shelf, the shopper's attention remains intensively focused on what they see above the fold on their screen. In the physical store, even products on the lowest shelf still have some visibility. Appearing on even the second or third screen significantly reduces the chance that a shopper will see the product. By then the shopper will have either clicked through or clicked away.

This means that search is incredibly important to leading traffic to a product. Search results also provide or link to useful content for the sought-after product and complementary products. These latter features can include the number and quality of user reviews, "others also bought" nudges, reminders about previous purchases, and individualized promotions. It is these kinds of features that enable companies to generate a high rate of associated purchases.

Position in search is determined by machine-learning algorithms, which rely on information such as like products or past sales. Optimizing these results is decisive for whether the shopper will click through or click away. What determines what appears on the small screen? This is of paramount importance. The approaches can include boxed results optimized through machine learning. Optimized cumulative hazard models and other technology can use the time between a shopper's search and purchase to determine when a shopper is liable to run out of a product, to replenish or pantry-fill for a specific occasion

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(e.g. holiday), or otherwise need a product with some level of urgency.

Patterns in previous shopper activity, at the aggregated or individual level, can provide a range of cues for the shopper to purchase. Imagine the day when a shopper can be active on the seamless shelf – whether in-store, on a device, or both – and take advantage of a “complete the shopping list” function, analogous to “complete the album” on a service such as iTunes. That list would draw on the shoppers’ previous purchases, the time lag between discrete purchases for a product, and promotions which can help nudge the shopper to make purchases of relevant complementary products.

## HOW DYNAMIC, INFINITE, AND INTIMATE COME TOGETHER

Beverages offer a simple and clear example of how the dynamic, infinite, and intimate shelf can work together holistically rather than in isolation. A retailer may stock pack sizes for several brands, ranging from single-use containers to 4-, 6-, and 12-packs on the physical shelf. Larger cases (24 or 48 count) are accessible, but not stocked in the physical store. The infinite and intimate shelf can draw on all of these SKUs, but the optimized machine-learning algorithms will tailor what shoppers see to their current needs, location, and occasion. If

**FIG 2:** Where do retailers see the greatest opportunities?

## RETAIL LEADERS PLACE A “SERIES OF BETS”

We asked a number of retail companies regarding improvements to profitability

COMPATIBILITY DIFFERENTIATORS	NATIONAL RETAILER	REGIONAL RETAILER	SPECIALTY GROCER	INDEPENDENT GROCER
INTEGRATED MASTER DATA MANAGEMENT	HIGH	HIGH	LOW	MODERATE
ALIGNED SHOPPER INSIGHTS	MODERATE	VERY HIGH	MODERATE	HIGH
IMPROVED PROMOTIONAL EFFECTIVENESS	VERY HIGH	VERY HIGH	HIGH	VERY HIGH
SEAMLESS FORECASTING	MODERATE	HIGH	MODERATE	MODERATE
ALIGNED VIRTUAL ASSORTMENTS	MODERATE	MODERATE	LOW	LOW
STREAMLINED ORGANIZATIONS	MODERATE	MODERATE	LOW	MODERATE

Source: The Nielsen Company and The Dialogic Group, 2018

current search and previous patterns indicate that a shopper may be planning a large party outside a traditional LTO window, the search could surface a 24- or 48-pack – perhaps tied to a promotion – as a better option than a 12-pack.

A retailer's ability to offer shoppers a seamless dynamic, infinite, and intimate shelf can put shopper loyalty to the test. Do not take an established customer's habits and inertia for granted. Instead they should take advantage of these habits and inertia through automatic re-ordering or even a subscription to a product.

## WHAT HAPPENS NEXT, SHORT AND LONG TERM

At first glance, the opportunities offered by the emerging digital shelf seem as endless as the shelf itself. The areas to address cover data and technology management, alignment of insights and assortments across channels, organizational issues, and the ability to deliver better financial and commercial performance. Furthermore, attempts to create a seamless shelf through solid machine-led intelligence usually yield some amount of continual improvement. Each of these aspects is an important capability and potential differentiator, which makes the question all the more challenging: where to begin?

FMI and Nielsen's survey of retailers (see Figure 2) revealed that the highest priority lies in better performance, or more specifically, improved promotion effectiveness. This is understandable considering that according to Nielsen, 72 percent of trade promotions and 74 percent of grocery promotions in 2016 failed to break even. We will make pricing and promotional effectiveness the focus of the remainder of this paper.

Each aspect of the digital shelf – dynamic, infinite, and finite – plays a role in improving pricing and promotional effectiveness. The digital shelf means not only that the shopper has a seamless experience independent of the channel, but also that the channels – physical store, mobile, tablet, PC, in-car displays, voice-activated home assistants – mutually reinforce each other. This growing digital influence has implications for how retailers generate the consumer insights they need to optimize their promotions.

## THE GROWING POWER OF EXPERIMENTATION

If the consumer experience is seamless, it means that retailers' experimentation can be seamless as well, linking the virtual and physical contexts. Managing these interconnections demands some form of AI-powered solution, so that retailers can make decisions based on data which is continuously generated, automatically harvested, and intelligently evaluated. This applies just as well to anchors within physical stores (*See Case 3: AI Meets the Deli Counter, page 18*).

The success of in-store promotions opens up opportunities for personalized pricing. Charging shoppers different amounts for the same product in-store – or even having two shoppers watch prices change before their eyes as one walks away – may create acceptance issues which would be much less pronounced if shelf prices remained constant but each shopper had a different, customized digital coupon.

The digital shelf, and the seamless experience shoppers expect and demand, makes it critical that retailers implement capabilities that allow them to compete on the merits of their own business models. That means that acting on the strategic re-think in Part 1 of the roadmap is within the reach of any retailer, regardless of size, coverage, and current level of digitization. A chain which relies predominantly on paper tags at shelf and physical promotional materials (in-store signage, weekly circulars, etc.) can still apply the hands-on roadmap described in Part 2. The only true prerequisite is an established process for making and implementing periodic price changes.

The physical shelf is still involved in the overwhelming majority of "digital" purchases and will maintain the unique value proposition of tangibility. Each traditional retailer must implement its own purpose-built applications in order to capitalize on the opportunities created by the Digital Shelf, and the form and depth of the solution will obviously vary by retailer. The subsequent hands-on stages of the roadmap (see Figure 1) at its highest level comprise three steps: Level-setting, Go-live, and Evaluation & Expansion.

## PART 2: LEVEL-SETTING

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Successful promotions depend on the integrity of everyday prices, which we can no longer assume are optimal given the emerging capabilities for data analysis, experimentation, and interpretation. The path to successful promotions in a post-omnichannel world therefore begins with a thorough review and potential reset of everyday prices. Everyday price changes are implemented at a greater frequency and are “always-on,” meaning they are constant anchors or references for shoppers.

FMI and Nielsen have revealed that promotion optimization is critical. But we believe that promotion optimization is a subset of broader shelf optimization activities. Everyday price is an even more critical area that needs to be reviewed and reset, in order to provide the most solid stepping stone toward enabling more efficient and profitable promotions.

McKinsey noted that sound pricing for key value categories (KVCs) and key value items (KVIs) is more relevant than ever in a world where digitally savvy customers can make instantaneous price comparisons and have access to a richer set of product information than ever before.

“The dynamics of the new digital retail era may tempt retailers to treat every item as a KVI and price it low to keep up with competitors and empowered customers,” the firm wrote. “We have seen this approach result in an unprofitable ‘race to the bottom’ as each competitor notches down its price to stay below the competition. Conversely, a dynamic, segmented approach to item-level pricing will allow retailers to optimize across multiple objectives (for example, margin, price perception, and market share) and across customer journeys.”<sup>4</sup> Retailers can move beyond a one-size-fits-all approach to pricing for a few hundred KVIs to a process which enables the dynamic optimization of over 1,000 KVIs. This represents an order-of-magnitude increase in a retailer’s pricing capability.

AI-powered experimentation offers an ideal platform for this pricing review and reset. Amazon has set an aspirational benchmark for retailers by applying AI throughout its business, from inventory management to demand forecasting and price negotiation.<sup>5</sup> But as stated, any retailer can benefit from AI-powered experimentation, regardless of whether they are using paper price tags with manual changes or are using state-of-the-art Electronic Shelf Labels (ELS).

## REQUIREMENTS GATHERING AND DATA INTEGRATION

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All retailers will have an existing price change process that AI and experimentation-based technology can integrate with. Everyday price change is the easiest place to start with experimentation because of the consistency and simplicity of price communication: a numerical expression in currency and decimal format (\$X.XX). Promotions have a much more complex form of communication, and ideally each element – offer structure, message, creative, channel, etc. – must be tested in the optimization process. The examples we have cited so far show the power of optimizing these elements, but they all derive from the integrity of the underlying everyday price.

A critical first step in optimizing everyday prices is to catalog all available data sources and degrees of freedom. What data are available related to price changes (unit sales, revenue, basket and sales of related items), at what frequency are prices changed, how are changes currently tracked, and how consistent are these internal processes across stores? The answers to these questions highlight the fact that buy-in from and collaboration with the retailer’s IT department is of paramount importance before any experimentation begins.

In this phase the retailer will also determine which products to include in the experimentation phase, as well as the guidelines and guardrails for the testing. Generally, a retailer would start with at least five high value, high velocity KVCs. Throughout the entire process, the tested prices should adhere to pre-determined guidelines regarding maximum changes, maximum gaps both to competitors and within the portfolio, and brand-specific issues. These rules should be designed to avoid large price changes within short periods.

Most stores will be treated as “experiment stores” and usually grouped by price zone at the outset. A small contingent of stores will always be held out for control purposes.

Another vital step in this phase is defining who is responsible internally for the testing at the retailer. Many retailers have a designated person or a full-time, overarching role for pricing, while at other retailers pricing is managed in a more decentralized way at the category level. No matter what, it is essential in this planning phase to establish a common understanding of the tests, who will monitor them, how the results will be collected and interpreted, and how they might be applied.

**FIG 3:** The testing loop, ready for continuous learning

# WEEKLY OPERATIONS

WEEKLY OPERATIONS FOR SHELF-EDGE PRICING

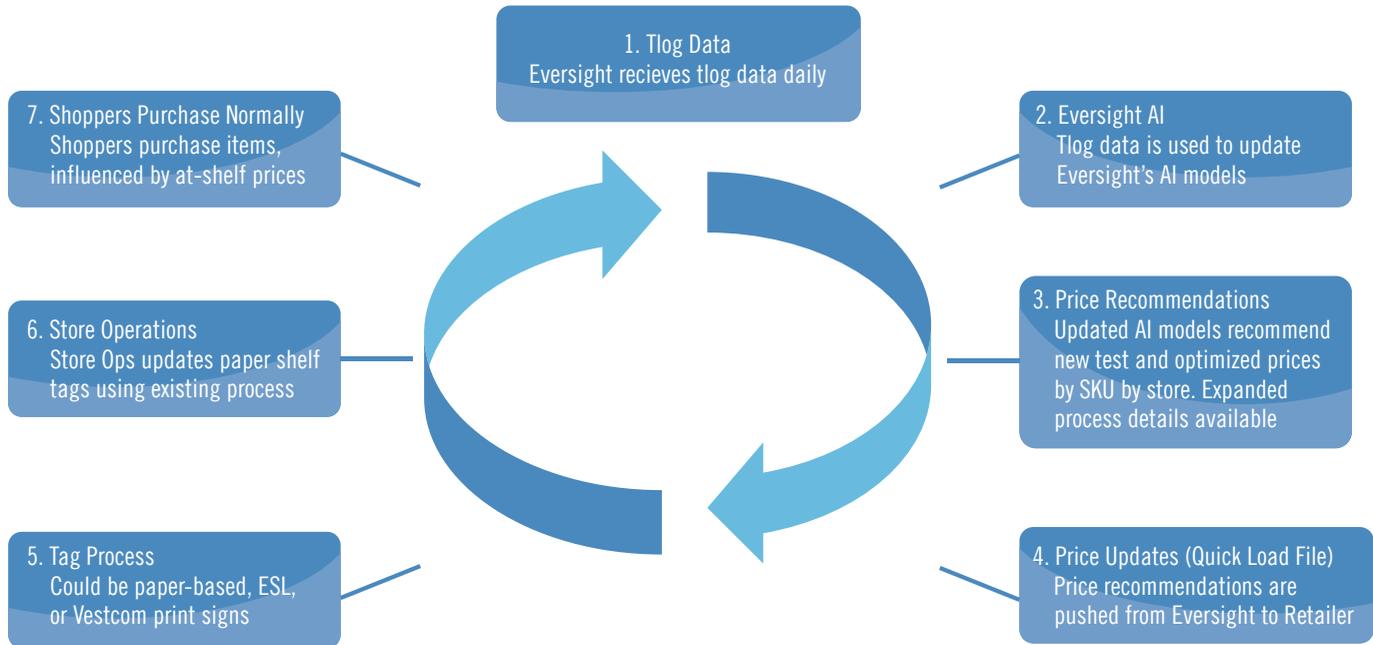


Figure 3 shows at a high level how the experiments operate and create a loop of continuous learning. Once the full testing process has been established, the retailer should be able to execute the weekly process shown in Figure 3. The next step is to launch and learn.

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## PART 3: GO-LIVE

### GO-LIVE: RAPID LEARNING

The system starts to “learn” from the data it gets back from the prices tested in-store. Prices are pushed out on a weekly basis through the retailer’s existing process (as defined in the Level-setting phase), after a review by a pricing analyst for any discrepancies with respect to the agreed guardrails. In this stage, the emphasis is purely on experimentation rather than optimization. The experiments run continuously.

In this phase, the retailer gets its first real sense of the financial impact of AI-powered price and promotion optimization. At the outset optimization can bring a retailer sales revenue improvement of 1-3 percent, which can have an even greater impact on margins as that additional revenue flows through to the bottom line. As increasing numbers of merchants, marketers, planners and store operations personnel adopt AI-powered technologies, the IDC predicts a 30 percent rise in productivity and improvement in key performance indicators (KPIs) by as much as 20 percent.<sup>6</sup>

**FIG 4:** Price variation and performance tracking in the Rapid Learning phase of Go-Live

PHASE 1: RAPID LEARNING — REFINES ALGORITHMS

PRICE GROUP NAME	CONTROL STORES 1-9	TEST STORES 10-26	TEST STORES 27-44	TEST STORES 44-60
PRICE GROUP 1	\$2.29	\$2.19	\$2.35	\$2.09
PRICE GROUP 2	\$1.79	\$1.69	\$1.75	\$1.89
PRICE GROUP 3	\$1.59	\$1.69	\$1.55	\$1.59
PRICE GROUP 4	\$2.19	\$2.29	\$1.99	\$2.25
PRICE GROUP 5	\$2.99	\$2.89	\$2.99	\$2.79
PRICE GROUP 6	\$2.49	\$2.65	\$2.59	\$2.49
PRICE GROUP 7	\$0.99	\$1.09	\$0.95	\$1.15

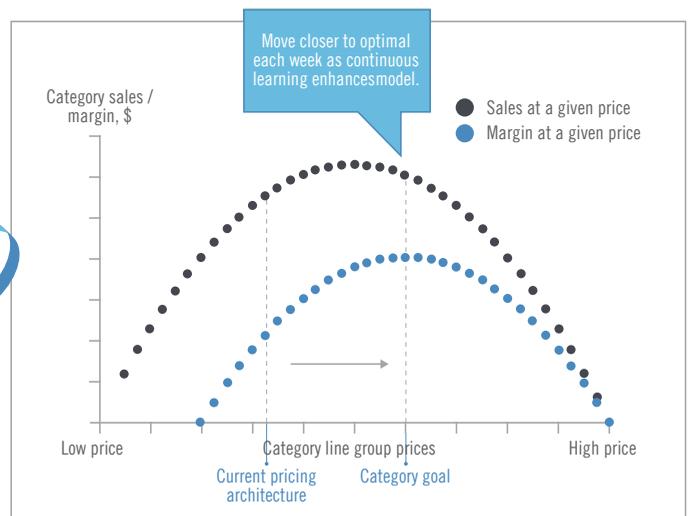


Figure 4 shows a basic overview of how prices for a specific product can vary by pre-assigned price group and by store group. The figure on the right shows the retailer’s goals, and how the performance of particular price levels within the category affect sales and margin. These two curves – which result directly from the experiments – offer the retailer unprecedented guidance for dynamic price optimization in a way that conventional historical analysis or survey-based consumer research cannot.

In the scenario shown in Figure 4, the price which optimizes margin dollars in this category (the peak of the green curve) would leave category revenue unchanged. The price which optimizes category dollars (the peak of the blue curve) would not achieve optimal margin dollars. Both scenarios, however, are superior to the performance delivered by the prices within the current architecture. How a retailer decides to optimize prices on the basis of this new data, derived from real in-store customer purchases within the experiment, is a function of the retailer’s mix of goals (revenue vs. market share vs. brand image vs. margin).

### GO-LIVE: CONTINUOUS LEARNING (OPTIMIZATION)

Two months into Rapid Learning, the retailer will see that prices have high statistical significance and be near the optimal price for each line group. The next step is to start price optimization, using these winning prices. In the optimized testing phase, a majority of the stores are at their optimized price with a subset left for testing. Prices will continue to update weekly as the algorithm improves and considers environmental changes, but the magnitude of weekly price changes will decline as most items should be near their optimized prices.

In this phase, the pricing analyst is no longer checking every single pushed out price, because by this time the system has learned to operate within a feasible range. The analyst can now manage by exception, i.e. responding to what the system flags.

## PART 4: EVALUATION & EXPANSION

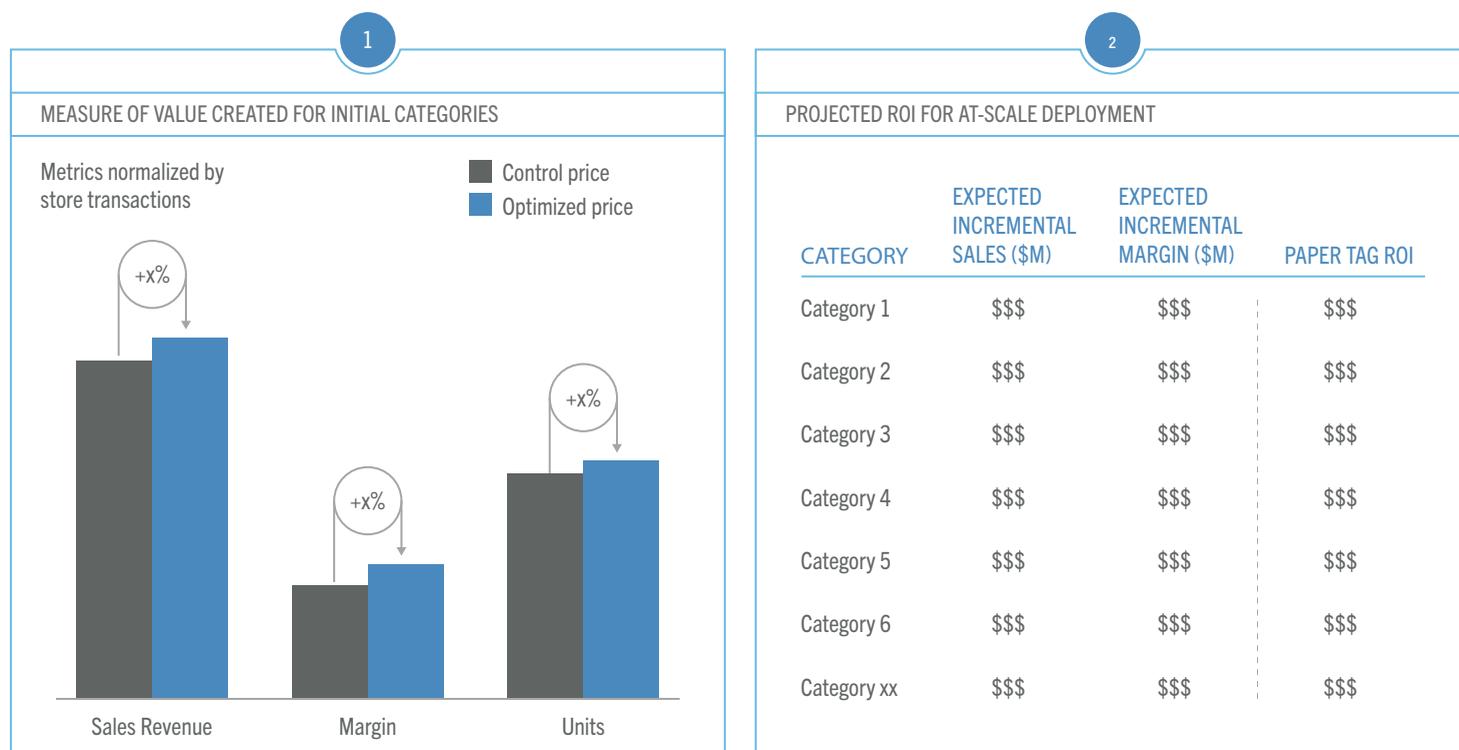
As the Go-Live phase concludes, the retailer needs to evaluate the results for the initial categories on which the price optimization experiments were conducted. This evaluation informs the extent to which the system should be scaled across all categories. For retailers who still use paper tags, labor cost evaluations will be a critical factor in determining the next steps. Such retailers may elect to focus on the highest value and more differentiated categories (KVCs), rather than pursue a full-scale rollout. They may also decide that the timing is ideal for beginning an investment into ESLs.

Making the results accessible and visible in a compact form drives better decision making and reinforces buy-in for the process as the retailer decides how to scale the work. The format in Figure 5 provides a clear overview of the impact on the initial categories at the aggregated level and also the estimated impact by category from scaling the results.

**FIG 5:** The extent of improvement (optimized price vs. control price) can be measured at the aggregate and category level.

### FRAMEWORK FOR EVALUATION

Overall, optimization can bring a retailer sales revenue improvement of 1-3 percent; however, the precise ROI will vary by retailer depending on the prioritization of different objectives - sales revenue, margin, units and more.



The next logical step after price optimization is promotion optimization. This calls for dynamic optimization through AI-powered, experimentation-led approaches, but also demands greater collaboration between retailer and the CPG companies. The allocation of trade spend between the brand and retailer can complicate the optimization process.

## PART 5: MAINTAINING FOCUS: A NEW WAVE OF STANDARDIZATION

Designing and implementing this roadmap requires that retailers prioritize initiatives that provide enduring differentiation and the resulting advantages. One consequence of this prioritization should be the standardization of other aspects of the business which began as powerful differentiators but now threaten to clutter the way to an optimized digital shelf and to drain valuable resources.

Three prominent examples are loyalty cards, proprietary apps, and payment systems. No one argues that these began as important points of differentiation for retailers. But that importance pales in comparison to the opportunities offered by the digital shelf in a post-omnichannel world. Over time, the fragmentation in loyalty and payment systems created inefficiencies, including integration, scalability, and customer experience issues. A phone clogged with apps and payment options – the 21st century version of the wallet stuffed with plastic cards – may now actually be an impediment to providing the customer a differentiated, seamless experience.

The advent of the Digital Shelf – and the new required capabilities to take advantage of it – means that retailers should focus on newer, more powerful points of differentiation. Given the opportunity to make a fresh investment in the in-store shelf experience and A/B testing or make, for example, an incremental improvement to a loyalty program, the choice is clear. Retailers need to standardize forms of customer engagement which are relatively

less important to customers, and customize what both matters to them and drives improved performance for the retailer. Standardization solves the inefficiencies resulting from the fragmentation, and leads to even greater benefits for individual retailers that move through the above roadmap to implement digital shelf optimization capabilities.

An open application programming interface (API) infrastructure accelerates industry standardization, because it encourages the development of applications that reach efficiently across multiple retailers or can enjoy universal application. For promotions, this leads to a universal standard for digital coupons and ultimately to the creation of a cloud-based coupon database linked to that universal standard.

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The use of AI-powered technology is penetrating the entire retail landscape not only because of the clear benefits we described in this paper, but also because it is accessible to any retailer regardless of their current size, market focus, or level of digital sophistication. Some retailers started early and have become more advanced in applying it, while others are just starting the internal conversations on how AI-powered technology fits into their future. No matter where a retailer is in its process, Eversight is open to joining and advancing these conversations. *To learn more please reach out to [marketing@eversightlabs.com](mailto:marketing@eversightlabs.com)*



## PART 6: CASE STUDIES

### CASE 1: WINNING PROMOTIONS

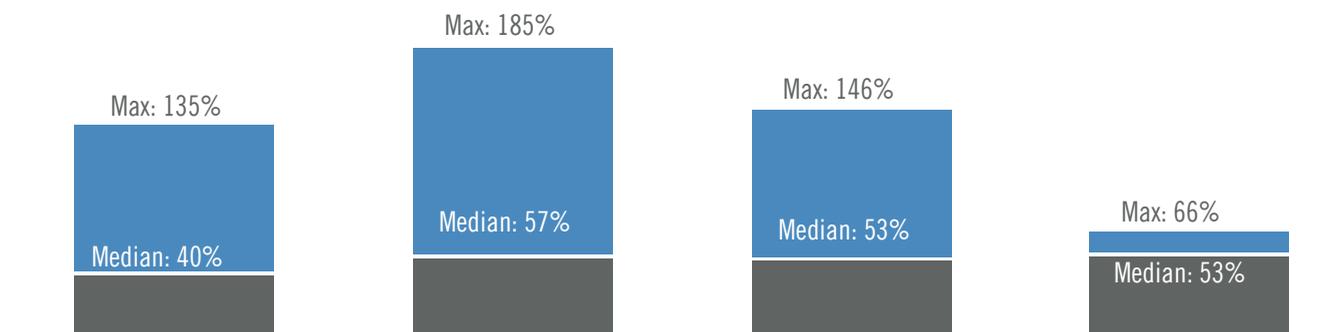


One regional mass retailer has witnessed firsthand how lucrative AI-powered optimization opportunities are. Using an offer innovation suite to test promotions, the retailer uncovered the best-performing offers among over 15,000 campaigns across 1,500 product categories. When category managers rolled out these “winning” promotions in multiple communications channels – the app, in-store collateral and signage, and online promotions – the cash register started to ring. In terms of net sales and unit sales, the median tested promotions outperformed previous promotions by 40 percent and 57 percent respectively. The median household engagement and median margins were both 53 percent higher.

**FIG 6:** The maximum and median results uncovered for optimized promotion sets through AI-powered promotion optimization.

DIGITALLY OPTIMIZED OFFERS DRIVE UP IN-STORE PROMOTION KPIS ACROSS TOTAL BUSINESS  
 AI-powered promotion optimization uncovered superior offer structures that outperformed the status quo

REGIONAL MASS RETAILER - Aggregated Experimentation Results Winning Offer Improvements Over Existing Promotions



## CASE 2: THE DANGEROUS PRICE OF A BANANA

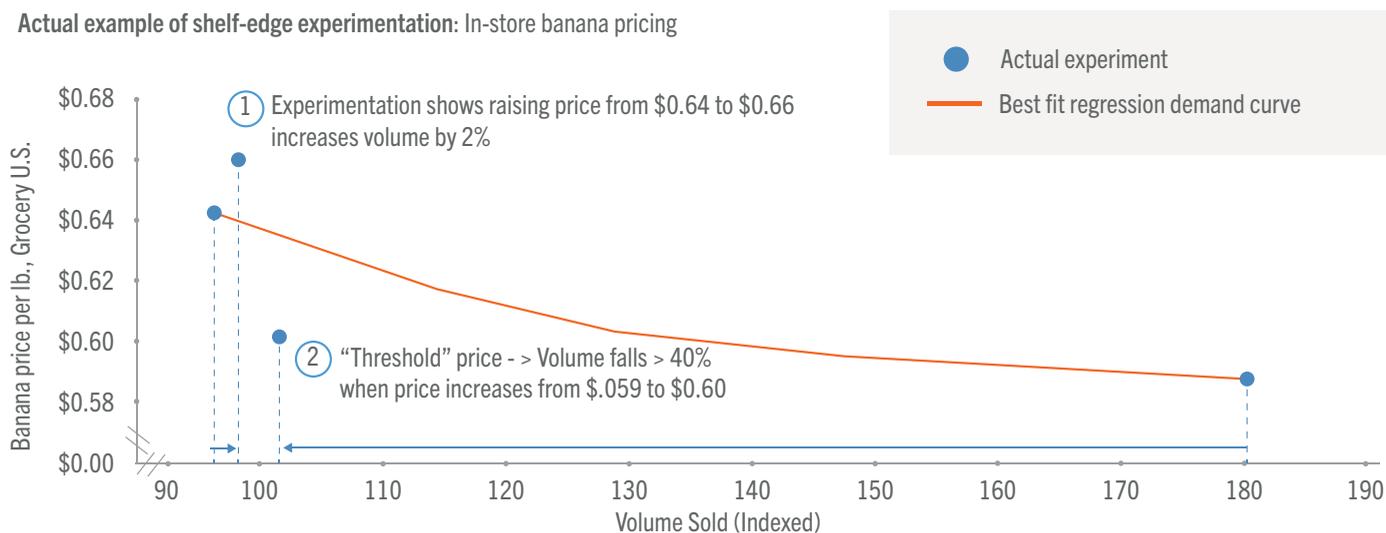


One retailer’s test with the price of bananas demonstrates how AI-powered experimentation can uncover dangerous price thresholds and unexpected profit opportunities which conventional methods of price-curve estimation (such as best-fit regression analysis) would overlook. Increasing the price-per-pound from 59 cents to 60 cents will raise the question of how much volume would drop due to hitting a threshold. The conventional approach predicted a 28 percent decline, while the AI-powered approach foresaw a decline of over 40 percent in volume. The same approach also revealed a counterintuitive result that volume would rise slightly when the price-per-pound increased from 64 cents to 66 cents. What made the difference is the reliance on actual shopper responses drawn from A/B tests administered through several channels. The ability to test at shelf in real time will only enhance the precision of A/B testing.

**FIG 7:** Shelf-edge experimentation results on bananas revealed unintuitive price thresholds.

SHOWS TRUE DEMAND, NOT PREDICTED “CURVES”  
 Everyday price examples: Benefits of AI & Experimentation

Actual example of shelf-edge experimentation: In-store banana pricing



# DIGITAL SHELF OPTIMIZATION

## CASE 3: AI MEETS THE DELI COUNTER

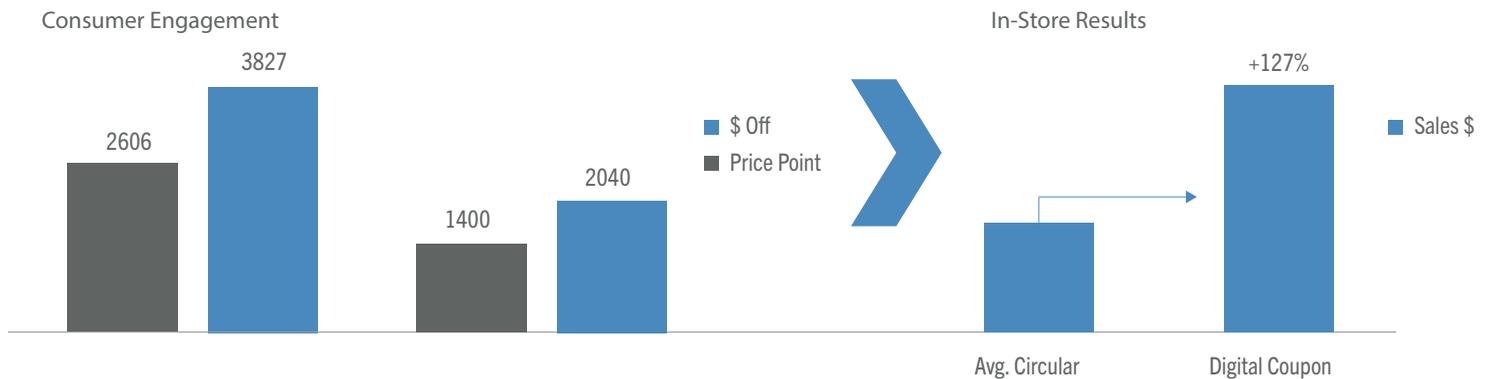


Think of a physical store anchor such as a deli counter. One mass retailer wanted to incentivize customers to purchase deli items at higher everyday prices, and at the same time re-engage lapsed customers with deli promotions that would resonate and drive improvement in KPIs. AI-powered experimentation revealed two insights for the retailer to act on. First, switching from a lower promotional price point to a “\$ off” message would allow the retailer to increase sales and engagement at a shallower overall discount (31 percent vs. 33 percent). Second, the retailer found that digitally delivered coupons resonated better with shoppers than coupons in the traditional circular. The implementation of this promotion more than doubled sales dollars vs. the traditional promotion and also freed up space in the circular for other potential promotions.

**FIG 8:** The extent of improvement observed through testing and when promotions are deployed in-store.

### AI MEETS THE DELI COUNTER

➤ AI-Powered promotion optimization revealed “\$ Off” structures had the strongest potential for increasing sales and engagement in-store



<sup>1</sup> <http://vestcom.com/ismads/>

<sup>2</sup> <https://news.microsoft.com/transform/kroger-smart-shelves-ditch-paper-drop-lights-delight-shoppers/>

<sup>3</sup> <https://eversightlabs.com/eversight-and-ses-imagotag-partner-to-bring-smart-dynamic-pricing-to-physical-stores/>

<sup>4</sup> "Pricing in Retail: Setting strategy", McKinsey & Co., April 2015

<sup>5</sup> Soper, Spencer, "Amazon's Clever Machines Are Moving From the Warehouse to Headquarters", Bloomberg, June 23, 2018

<sup>6</sup> "Making Your Omni-Channel Strategy A Reality", IDC white paper, September 2017

# FMI tech Community

At FMI, we're committed to bridging the gap and building on the opportunities between food retail and technology. Our FMItech community continues to offer strategic insights on technology implications for every facet of food retail. Our goal is to be relevant and helpful in saving you time and resources. We hope you will continue to look to FMI as your connector to information, trends, thought leaders and subject matter experts on technology applications for your retail operations.

As part of our Omnichannel Digital Imperatives series, we have partnered with tech-savvy organizations to create this Operational Imperative series. We recommend beginning with the *FMI Executive Workbook 2019: Following the Profitable Path to Your Digitally Engaged Grocery Shoppers*, and chart your course through the operational imperative series, at [www.fmi.org/omnichannel](http://www.fmi.org/omnichannel).

We will continue to provide you resources on [fmi.org/omnichannel](http://fmi.org/omnichannel). If you have any questions, please don't hesitate to reach out. I'm available at [dbaker@fmi.org](mailto:dbaker@fmi.org) or 202.220.0719.



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