

WHITE PAPER

The future of category management:

Top trends for the next decade

Abstract

Retail customers of the 21st century are more demanding than ever before, and their shopping behavior is more complex. Whether we like it or not, the traditional method of serving the market no longer works. The old methodology of analyzing past sales to determine when to ship merchandise from a warehouse to stores cannot meet the omni-channel demands of the shopper. In today's "my way" retail environment, technology-enabled consumers have enormous expectations that impact every aspect of retail.¹ This new reality has created the need for an "always on" category management platform that runs at the current and future speed of retail. This white paper investigates the top category management trends over the next 10 years. It also suggests ways that retailers can begin adapting now, in order to remain relevant, competitive and successful in the next decade and beyond.

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1

Introduction

The retail industry is in the midst of a profound structural shift from physical, brick-and-mortar stores to a hybrid physical-and-digital environment. This dynamic — along with the new volume, velocity and range of available consumer data — is accelerating the need for a major transformation in category management. Today, retailers need to rethink their approach to targeting customers. Changing the way the business operates will enable retailers to provide shoppers with the services and products they want, when and how they want them.

Best practices in category management over the next decade will be focused on enabling a faster response to changing conditions, including the increasing trend toward localization. The next generation of category management will replace today's project-oriented approach with a higher-frequency methodology. This will be enabled by the availability of a wide array of data sources — including Big Data and social media — as well as the ability to process, act on and learn from this data. Category management will transition from a rules-driven paradigm to a learning paradigm enabled by machine learning.

This transformation will be accomplished by enabling a new set of capabilities:

- **The ability to anticipate demand** using a vast array of consumer insight data sources
- **Alignment of assortments** with local demographics and shopping patterns, based on this data
- **Translation of assortment decisions into executable space plans** that optimize both space allocation and optimal facings on store-specific planograms

This new reality will necessitate a significant reduction in human touchpoints. Leveraging automation will deliver better results with less user interaction, allowing retailers to operate on the scale required to support localized category management initiatives. The next generation of category management software will combine the art and science of merchandising to help retailers see their business the way their customers see it. By planning for the way customers actually like to shop, retailers can precisely deliver localized assortments and personalized offers.

This white paper aims to showcase and explore the prevalent trends that will reshape category management over the next decade, laying the foundation for this new reality.

2

Big Data: Revealing consumers' behavior

The entire world is becoming more and more data-driven. Retailers have one of the biggest opportunities to take advantage of this trend. Big Data in retail offers big payback potential. The McKinsey Global Institute estimates that Big Data can grow profits in the retail industry by 60 percent. Success will be based on mining the volume, variety and velocity of consumer data streams in order to generate insights. These insights will lead to timely recognition of shopping patterns and demand trends. The benefits will be realized in more successful product launches, optimized assortments and merchandising, more personalized marketing and better consumer relationships.²

Gone are the days of relying on antiquated descriptive analytics about how “like items” performed in prior years. Big Data, enabled by machine learning, is providing transformative opportunities for retailers. Today, customers buy products across multiple channels using real-time information to make purchasing decisions through reviews, ratings and price comparisons. They leave a trail of information about their preferences.³

Retailers need to collect and analyze this structured and unstructured data to predict what will happen in the future. Shopper profiles can be developed to help them understand the behaviors driving customer demand. Retailers can then adopt responsive category management strategies which will help them engage more customers, more profitably.



2.1

A new environment requires new practices

Competing in this new environment — populated by always-on, highly connected, informed consumers — won't be easy for retailers, but it is doable. In fact, considering the doomsday predictions of the past regarding brick-and-mortar stores, retailers should be inspired. Retailers that can predict trends will discover how to gain and retain loyal, engaged consumers who follow through on purchases, spend more and spread the branding message for them.⁴

However, in order to adapt to the new reality of the next decade, retailers must adopt these key practices:

- **Real-time data monitoring and sentiment analysis.** Making data more accessible in a timely manner — in order to recognize market shifts and demand trends — will create tremendous value for retailers.
- **Consumer micro-segmentation and offer customization.** With the abundance of digital data retailers can access, they now have the ability to create highly specific segmentations. They can tailor assortments, pricing, promotions and product placement to engage more consumers.
- **Predictive analytics.** Retailers need to leverage available consumer insights to support increased localization and personalization, dynamic pricing and improved merchandising.

Establishing these new practices will mean acquiring the right talent to manage Big Data. The new world of workflows, collaboration and advanced analytics requires new skills. The value of skilled data scientists and data-savvy managers will only grow as data and analytics tools become even more widely available and applicable.⁵

3

Reinventing the customer experience

Shopper behaviors, wants and needs will shift constantly and by category/product type. This means that there will be an increasing need to personalize the shopping experience, whether online or in-store. Consumer profiles need to be developed and maintained, and products targeted to those specific profiled consumers. This is necessary to maximize the impact of product ranges and offerings on consumers and ensure more profitable returns. It will only

become more important going forward. Achieving real-time analysis of data to predict trends, and having the ability to act on the insights, will drive retail innovation in the future.

Winning sales at the retail shelf will become more important, and new tools are emerging that enable the capture and analysis of data — including smartphone apps that track consumers in the store, as well as customer databases tied to loyalty programs. Retailers can leverage these new technologies to win increased sales. For example, the insights gained from monitoring customers in the store can be used to generate instant coupons. Data about shoppers' purchase path will also support more targeted, more specialized brick-and-mortar retailing.

All retailers need to gather and analyze demographic data to understand not only who lives nearby, but also who works nearby and who drives past the store every day. Merging smartphone apps with existing loyalty programs can help uncover this kind of information.

3.1

Mobility will continue to transform the shopping experience

Today, mobility is transforming the way shoppers engage with retailers — and this trend will only continue. Over the next decade, mobile technology will increasingly be used by shoppers on the path to purchase. The smartphone will continue to be integrated into all parts of the shopping journey, from research through shopping, payment and follow-up.

In the future, augmented reality will increasingly allow shoppers to see products beyond the box or showroom, providing consumers with personalized information while they are browsing shelves. Other innovations will include more self-service check-outs via mobile devices, in-store mapping for easy self-navigation around stores, and beacon technology for greater self-education on products.⁶

Sensors placed strategically around stores will enable retailers to recognize shoppers via their mobile devices when they walk through the door.⁷ Items may be scanned into the basket using the retailer's mobile app on a smartphone. Shoppers can simply walk out of the store with their purchased merchandise, having never interacted with a checkout.

Retailers will use mobile devices to bring better insights into the selling process through access to purchase histories, preferences, loyalty program status and other personalized recommendations.⁸ Adding rich product content to the selling process via mobile devices brings another level of detail to the shopping experience that customers will appreciate. In addition, indoor location technology has the potential to transform shopping into a more interactive and personalized experience, enabling retailers to provide new services to shoppers.

The future of retail lies in creating a personalized shopping experience via better engagement, enhanced customer service and more informed retailers. From the retailer's perspective, mobility provides the opportunity to further enhance personalization and targeting by leveraging the shopper's location.⁹ Mobile tracking technologies will provide additional context to improve retailers' understanding of the consumer's path to purchase, allowing retailers to become better at targeting consumers with the right offers.

3.2

The retail store will change significantly

Already, the role of the store is changing from primarily being a shopper experience and purchase point to becoming a fulfillment center, returns center and showroom. This trend will only continue over the next decade, driven by retailers' need to satisfy customers and provide them with instant gratification.

Retailers will need to develop new in-store processes to serve the omni-channel shopper. Grocers need to solve the problem of delivering products to consumers' homes, while maintaining the freshness and correct temperatures of products. Soft lines and hard lines retailers must contend with consumers' growing tendency to use their stores as "showrooms" — then buy products from an online retailer who offers a lower price. Every retailer must figure out how to merge physical stores with online channels via "drive through" store pickup services or other click-and-collect options.

There will also be a significant impact on store labor as roles change. Associates will take on supplier and fulfillment roles in providing customer service for in-store pick-up. There will be more opportunities to support a truly personalized shopping experiences as sales associates gain the ability to identify shoppers as they enter the store. As more data flows to sales associates in real time, they will be better equipped to maintain compliance with promotions, fulfill unpublished offers or place online orders when products are not available in the store — thus improving the customer experience.

Store management and category management will be required to work together more closely as the various functions within the retail store change with greater frequency. Overall, the focus for improvement will be on personalizing the customer experience; maximizing on-shelf productivity; ensuring inventory availability for display as well as pick-up; and creating visibility of shipments, inventory levels and sales across the entire supply chain.

In fulfillment, stores will be served by larger "hub" stores as well as smaller regional distribution centers (DCs) in an effort to increase speed and responsiveness. Online orders can flexibly be shipped from these smaller DCs and hub stores, as well as larger, more centralized DCs. Category managers will require visibility into all these locations.



4

Localization/personalization: The new imperative

In today's global economy, one size does not fit all. There are numerous examples of a product being hugely popular in one part of the world, but failing miserably somewhere else. There are many reasons this can occur, but it's clear that retailers need to clearly understand their consumers — and their geographic differences — before they embark on category planning. Success in the global marketplace requires every category manager to define the products, ranges, assortments and marketing tools that will reach different consumer groups in different areas. For example, they must understand regional color preferences, culturally appropriate product names and other nuances.

Shopper behaviors, wants and needs will continue to shift. This means there will be an increasing need to personalize the shopping experience, whether shoppers are online or in the store. Consumer profiles need to be developed and maintained, so that products and offers can be effectively targeted to specific consumers. In addition, real-time analysis of consumer data will allow retailers to predict trends and act quickly to gain a competitive edge.

How can retailers increase their understanding of individual consumers? They can leverage social media metrics, demographic profiles, information from loyalty programs, and geographic and socio-economic data. They can also apply prescriptive analysis to study shopper habits, in-store pathways, shopping basket contents and adjacencies. Substitution and cannibalization metrics can help provide a deep level of personalization based on shoppers' demonstrated needs and preferences.

Obtaining and leveraging a larger, richer data set will require retailers to increase their expenditures on software and services. Host systems will need to be expanded to include new, more robust attributes. In addition, organizations will need to hire employees with the skills required to extract actionable insights from this data. Organizational changes will also be needed to enable greater collaboration across functions within the retail organization, as well as between retailers and manufacturers.

4.1

Automation resources will be key to localization

The need for localized assortments has continued to put a strain on retailers, as well as manufacturers who support them. In today's hyper-competitive, omni-channel environment, localization of assortments is the new norm. In fact, the number of planograms and assortments needed to support localization strategies has increased significantly in the past three years.

Increased planogram generation demands, specialized assortment planning and the need for data analysis are straining category management departments. Because headcounts are not increasing, there is a huge potential for employee error and burn-out.

The answer lies in automation: the application of template-based, rules-driven processes enabled by computers, significantly reducing human touchpoints. Automation is not just valuable in reducing repetitive, redundant tasks which are manual today; it also allows an immediate response to any significant changes detected in the customer demand and supply chain, without the need for human intervention.

It will be critical for organizations to adopt automation resources, including software and scripting tools, in order to meet the arduous task of supporting the store-specific needs of local consumers. With automation, space plans tied to replenishment will be updated as needs shift in real time. In addition, changes to the macro space will always be in sync with space planning and assortment changes.

Category management work processes will shift from task-driven functions to automated, rule-based plan creation, helping counter the current problems of understaffing and employee burn-out.



5

Collaboration: Adopting a joint business planning approach

There is an increasing need in the market for collaborative planning between retailers and manufacturers. Joint business planning (JBP) — also known as integrated business planning — is the process by which manufacturers and retailers come together and align on corporate goals and strategies to better serve the customer. Sharing information and aligning goals, in theory, creates a mutually agreed-upon business plan. The market trend as we move toward 2026 and beyond will reflect a move toward more collaborative business plans.

Sue Nichols, CPSA Category Management Knowledge Group, in a blog post from January 2016, states: “In theory, joint business planning is a collaborative effort between the vendor and retailer which involves open sharing of information. From a basic level, it is a business plan that is developed between vendors and retailers, through sharing of select information.

- The plan should include expected trends, initiatives and the forecasted market environment, so that there is a greater chance for the goals and objectives within the plan to be attained.
- A successful joint business plan requires each party to clearly understand the others’ goals, business and customer requirements.
- Shared understanding becomes the foundation of the JBP, with both businesses pooling their resources and expertise to achieve specific goals. The risks and rewards of the plan are also shared.”

As they seek to implement a JBP approach, organizations’ biggest challenge will be securing the buy-in and support of senior leadership. The high level of trust needed to share not only strategic plans, but also the data sources required to support long-term strategic planning, will be critical for the process to evolve and work.

While this process will be difficult to implement, it is a strategic imperative. The implications of isolated planning will directly and negatively impact both retailers’ and manufacturers’ ability to satisfy the consumer. Failure to adopt JBP will result in the erosion of product availability, both in-store and online.

Retailers and manufacturers will continue to benefit from JBP as the omni-channel evolution continues. The ability to better understand future consumer needs, and work together to address them, will become critical to introducing new products and ensuring availability.

6

Monitoring and increasing compliance in stores

The best assortments, planograms and space plans deliver minimal value if they are not implemented properly. In-store compliance with plans is essential for success, now more than ever. A shelf set is considered compliant when all merchandise is set according to the planogram. This is, however, a rare occurrence which most likely exists only for a few minutes after the reset has been finalized. The moment shoppers start adding items to their baskets, compliance begins to deteriorate.¹⁰

This failure to comply does not even take into consideration compliance with marketing plans, including the placement of signage and other materials. Many consumer packaged goods (CPG) companies believe that much of the in-store marketing materials they send to stores are either installed incorrectly or never placed at all. It takes an incredible amount of time and focus to ensure that planograms are followed consistently in the retail store.

The criteria for compliance may vary across different product categories and classes of trade. In many cases, retailers may be able to measure the condition of five to 10 “destination” items for each category and the items adjacent. If the key items and their adjacencies are correct, then the set is probably in good shape overall. If not, retailers may be able to assume a compliance problem. Many retailers have compliance scorecards to help ensure that planograms are being adhered to.

Even today, most retailers find it difficult to measure accuracy down to the shelf level, or the degree of compliance of a shelf set against the planogram schematic. Accurately measuring compliance requires the ability to validate in-store sets against the assigned planogram model. As this manual, time-consuming process frequently yields nebulous results, it is essential for retailers to explore and leverage technologies that will enable them to monitor and maintain their shelf-sets with much less effort.¹¹

For example, cameras in mobile devices can help optimize the selling potential of every square foot by visually reporting planogram deviations. This enables rapid adjustments to shelf strategies and supports higher sales. Continuous monitoring of the in-store environment could be combined with technology like the new LED smart lighting from Philips that will allow a retailer to track a consumer's location in the store to within inches. Retailers will be able to understand how much time it takes for consumers to make a purchase decision, with the goal of improving customers' shopping experiences. In addition, crowdsourcing data from customers' smartphones could be deployed to help solve in-store problems. Customers could be asked to complete a task, then rewarded with an incentive. These are just a few of the groundbreaking technologies that could transform the retail landscape between now and 2026.

7 Leveraging feedback for continuous improvement

In the next decade, retailers not only need to understand shopper behavior, but the availability of real-time inventory to meet that demand. Monitoring, analyzing and adapting to the variety of purchase paths available to shoppers will be the foundation of success in retail.

Executing successfully at the store level, while providing performance metrics to the corporate team, will be essential to identify and accommodate rapidly changing customer desires and shopping habits. Category managers and corporate planners will need the ability to view and analyze store-level performance and make changes to the planogram. By monitoring performance metrics and adapting to changing customer desires and shopping habits, category managers will be able to optimize planograms on a continuing basis.

Stores will need to execute on the plan and be able to provide increasing amounts of data on store performance. This feedback will need to be rapid and actionable so that more targeted shelf merchandising can be adjusted or created to support stores' needs.

Retailers need to increase visibility into their floorplans, in order to decide if placements and adjacencies are supporting cash-register sales. They need the ability to run "what-if" scenarios that allow products to be reset until the best floorplan is determined — based on factors such as consumer choice, adjacencies and labor optimization.

Beyond the performance of products, retailers must optimize the performance of the in-store workforce. Task management tools will ensure work is completed, while also prioritizing tasks such as resets and display setups. These tools will provide the capability to see what is most important to do on any given day, prioritize tasks considering the staff that is available and maintain customer service.

8 New world, new skillsets

The next decade will demand significant changes in employee skillsets in order to support the category management process going forward. There will be an increased need for data analysis as it relates to assortment localization, omni-channel planning and space elasticity. In addition, there will be an increased need for staff who can define the rule sets needed to automate category management and space planning for mass localization.

The challenge will be finding the critical resources and advanced skillsets to support the changing retail world. Based on a study conducted at DePaul University in September 2015, the retention of category management professionals will begin to erode, and by 2020 organizations could lose up to 20,000 category management professionals. With less than 2,000 new category management professionals entering the market per year, there is a looming talent shortage of crisis proportions.¹²

To address this problem, organizations will need to find many more graduates and professionals with experience in data science and predictive analysis skillsets. They will also have to consider the personality types of new employees. For example, Millennials are much more tech-savvy than older employees. They need to be challenged and may not be suitable for the redundant tasks that characterize space planning. Analysis of customer and assortment data may be a better fit.

Organizations should identify universities with category management programs that have forward-looking curricula, focusing on data and analytics — then recruit from these schools.

9 Emerging technology innovations will support these trends

A number of technology trends and innovations will help retailers over the next decade as they seek to better understand the flow of products through the supply chain, as well as the shifting needs of the shoppers they serve.

Ubiquitous high-speed connectivity via network communication will become the norm, with consumer demand fueling growth in the necessary structure worldwide. This allows for the growth in distributed/cloud-based systems which can assume full connectivity at all times.¹³

Neural networks are expected to play a role in extracting meaningful insights from large quantities of information. Neural networks first emerged during the late 20th century as a potential method of allowing machines to learn, by modeling them on the neuron/synapse systems of the biological brain.¹⁴ Limitations to their structure meant that they did not fulfill expectations at the time, but further developments since 2006 have shown great promise by extending the number of hidden layers, using the back-propagation algorithm and convolutional techniques.^{15,16}

Today, deep-learning neural networks are finding useful applications in many fields which require pattern recognition from large amounts of data, including visual object recognition^{17,18} speech recognition¹⁹ and customer profiling. Over time this approach will be applied in more fields with great effect, potentially even to tasks involving “human” design, like planogram creation.

Systems that provide virtual and augmented reality visualization features will continue to grow, fueled by increasing capabilities in graphics processing, screen technology (with reduced size and cost), and associated software processing. Virtual reality can replicate the physical world in 3D with completely machine-generated replicas — viewed via large screens or head-mounted devices. Virtual reality can show environments — like a new store layout — that would be difficult, time-consuming or expensive to produce, as well as enable rapid changes for easy what-if visualization.²⁰ Augmented reality overlays the “real” environment with machine-generated content, visualized on a screen or a headset with a camera and potentially other sensors.²¹

Mobile hardware technology will continue to grow in capability as hardware manufacturers readjust their products to target a greater demand for reduced volume and power consumption in all aspects — CPUs, GPUs, memory and batteries. The usability of a device’s input and output mechanisms will determine the size and shape of a device, rather than the hardware’s own requirements. While current wearable devices like Google Glass need to compromise significantly on battery life, computing power, size and/or weight²² — or be connected to a larger device²³ — in the future, wearable devices will be much more practical. Improvements in battery



size and performance, together with reductions in CPU and memory size, will make wearable devices smaller and more user-friendly. This will allow many new applications, including in-store capabilities for retailers.

The implementation of radio frequency identification (RFID) technology will enable retailers to operate in real time to better serve the omni-channel shopper. RFID tags will be available on every shelf location for in-store picking, as well as re-stocking. The planogram location ID will be linked to the store shelf or location ID (such as the aisle). For fashion items, these floorplan locations could change dynamically every other week — so RFID data needs to be updated based on these products' movement within the store.

In addition to supporting better availability at the shelf level, RFID and location tags will enable more targeted customer interaction, such as the production of instant coupons. By capturing shelf-level data via RFID technology and analyzing it, category managers can continuously improve the effectiveness of in-store promotions.

Furthermore, the combination of RFID, in-store cameras and smartphone tracking will provide a detailed view of how consumers' traffic patterns differ by profile. A complete picture of in-store consumer behavior will emerge: where an item was purchased, what route the shopper took, what other items they bought. This information can be combined with purchase history, purchase frequency and channel preference for a complete and current customer profile.

Another area of promising technology innovation is environmental sensors. These sensors, which provide input to mobile devices, will grow in capability. Retailers can use them for:

- **Indoor positioning.** Systems will improve to accurately pinpoint a device's location — even indoors, where no satellite-based system can be used. This will be particularly useful for in-store applications which require an accurate current location in store.
- **Speech recognition.** Microphones and associated speech recognition software will improve to allow instantaneous understanding of verbal input to any device, in many cases replacing the need for a physical input device like a keyboard or touch screen. This will allow in-store devices to pass and receive information from a user while leaving both hands free.²⁴
- **Motion detection.** Infrared and other motion detection methods will grow in capability to allow devices to track user movements accurately, allowing alternative methods of input and machine recognition of user activities. In-store uses will include the use of hand gestures to modify augmented reality views or automatically detect tasks — for instance, to provide supporting information when a user is resetting a shelf.²⁵
- **Camera surveillance.** Cameras will become more capable, with greater resolution and higher frame rates in a smaller size, allowing their placement in more locations to monitor conditions and traffic patterns, as well as detect problems like out-of-stocks.

10

Ready or not, here comes the future

Today's omni-channel environment is already forcing major retail chains and their trading partners to rethink their category management processes. The calendar-based plans of yesterday are quickly being replaced by an ongoing planning process that considers rapidly shifting market dynamics and constantly refines plans. This “high frequency” approach to category management more closely reflects the speed of retail, facilitating minor adjustments and daily recalibrations.

In the future, category management teams will only grow in responsiveness, leveraging new capabilities such as neural networks and Big Data to micro-target shoppers, fine-tune individual stores, and bridge the physical and digital worlds to personalize the shopping experience. Next-generation category management solutions will automate the production of localized plans, based on the availability of more granular data and high-powered algorithms and analytics engines. Enabled by machine learning, category managers will easily produce localized assortments and planograms based on rules-driven functionality.

As the category management talent pool shrinks, both retailers and manufacturers will need to reexamine the skillsets required to support high-frequency category management. Higher levels of talent, such as data scientists, and different skillsets – including analytics, interpretation and rules-based thinking – will be needed to manage the increasingly complex and technology-enabled task of category management.

Increased levels of collaboration between retailers and their manufacturer partners is yet another requirement for success over the next 10 years. Greater sharing of behavioral data will help both partners understand consumer trends, identify new opportunities and make plans with a high probability of success.

To survive in the new era, retailers will need to operate at a faster tempo than their competitors by understanding and anticipating shoppers' behavior throughout the shopping journey. Understanding the what, why, where, how and when of consumers' buying behaviors will allow them to think like a customer but act like a retailer. Whether it's looking for the next big opportunity, making a move before their competitors or assessing the current state of affairs, retailers will need to be laser-focused and decisive. This new reality will create the need for an "always on" category management platform that runs at the speed of retail, facilitates agile decision making and supports rapid strategic shifts.

If this new reality sounds intimidating, it's time to start making changes in your business model now. By beginning to adopt emerging technologies, taking stock of your human resources, increasing consumer insights and building more collaborative relationships with trading partners, you can adopt a more agile stance that positions your company for continued success.

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