

Personalization is Not Just for Consumers; Merchants Want it Too

A joint paper by TCS and Microsoft Corporation

by Lindsay Phelps

*Consulting Partner,
TCS Algo Retail™, TCS*

Michele Camuri

*Industry Lead, Retail and CPG,
Microsoft Western Europe*

Jordi Rua Gonzalez

*Industry Executive and Grocery Expert,
Microsoft Western Europe*



“Having consumers in the driving seat is another big challenge.”

Shelley Bransten

*Corporate Vice President,
Microsoft*

The Complicated World of the Merchants

The merchant role has become increasingly complex in the last decade. With increasing competitive and financial pressures, it has become imperative for retailers to differentiate themselves through personalized approaches and strategies, and to offer curated shopping experiences that are tailored to shoppers' needs. To achieve this type of personalization, merchants must put data at the heart of their strategies. Grocery retailers are supreme examples having troves of data. Given the propensity for a customer to make multiple trips to the store and e-commerce sites for their daily or monthly needs, grocery merchants are privy to a lot of transactional data and digital footprints that customers leave behind. Right now, despite the abundance of data, retailers are only able to generate transactional reports. The challenge is to determine how to lure customers with compelling offers and new propositions like subscriptions, and to encourage buying across different grocery segments. There are added complexities too. What goes into the customer's grocery basket is determined not just by individual preferences but by that of an entire household.

As Shelley Bransten, Corporate Vice President at Microsoft, says, “Having consumers in the driving seat is a big challenge. It requires understanding and moving at the right pace to meet the consumer of the future, and really getting to grips with where those consumers are going and what they expect. The next generation of consumers expect personalization at an unprecedented scale. Tastes and preferences are no longer declared but learned in real time through the ‘digital exhaust’ they create as they navigate their virtual and physical worlds. That’s going to put massive pressure on retailers and the technology they have in place today.”

As consumers increasingly adopt omnichannel shopping, merchants must weave in the context and shopper intent, as well as extend personalization to stores. This requires dynamic and integrated decision making across the value chain, factoring thousands of internal and external factors. Algorithmic retail is a paradigm shift in how retailers do business. By seamlessly integrating data across the retail value chain, they can unlock exponential value from retailers' growing data assets by automating basic processes and adding intelligence to decision making processes across many functions and areas of the business, allowing key stakeholders to focus on top-level strategy. The real value of algorithmic retail can be derived when these capabilities coexist in harmony with humans, significantly amplifying and augmenting human ingenuity.



**“Intelligent cloud’
will be a strong
catalyst powering
integrated, strategic
decisions.”**

Siva Ganesan
Global Head,
Microsoft Business Unit, TCS

The Opportunities Offered by the Digital Merchant

“What merchants lack is a comprehensive AI-powered, cloud-enabled platform that can help them analyze customers’ buying behavior and patterns that emerge from repeat purchases across channels and drive better customer-centric strategies. ‘Intelligent cloud’ will be a strong catalyst powering integrated, strategic decisions,” says Siva Ganesan, Global Head, Microsoft Business Unit at TCS.

The digital merchant is a concept that many retailers are pursuing these days. They want a cockpit view of their operations that is data driven to help merchants drive real-time decisions across the value chain. For example, if a retailer decides to run a long-term promotion on the cheese category, what is going to be the implication on the facings required for each item to support the increased unit movement? How do these increased facings roll up to the total space required for cheese? How will it impact the performance of the overall dairy category? Will it be necessary to pull space away from other categories and make room? When the promotion finally ends, what should the regular price be?

To effectively actualize this concept, we need to deliver the promise of the digital feedback loop. It is the capability to connect data from different parts of the organization for cost savings or from a top-line perspective across each business area. In the cheese example, a retailer would need a strong foundation in price optimization, competitive pricing insights, assortment optimization, and potentially space optimization in order to deliver.

Price, Promotion, and Markdown Optimization

Pricing has long been determined by a series of rule sets, often managed in Excel. These rules rely on very large sets of data including customer data, performance/transactional data, store location/zone, and elasticities. Therefore, harnessing these successfully to optimize pricing is beyond the capability of spreadsheets. True price optimization allows retailers to balance all the complexities of price setting and maintain control over margins over their pricing strategy, and if done well, their customers’ price perception.



Related areas to price optimization are the promotional and markdown optimization functions. Many retailers still use manual tools and processes to track these tasks. One of the problems at the heart of promotional optimization and markdown optimization is that many retailers revert to averages when analyzing and planning the next event, resulting in massively suboptimal results. They also don't have easy-to-use, user-driven forecasting support. In both cases, there could be elements of vendor deals and vendor funding that may influence the best packages and discounts to offer. There is also the view of how much inventory is left across the stores and distribution centers and when the product should be exited or how long the promotion should run. So, with the complexity of performance, vendor contributions, time, and anticipated customer response, price optimization is a key focus area for retailers wanting to leverage artificial intelligence (AI) and machine learning (ML) to model and recommend strategies.

Case Study: Transforming Pricing with the Interplay of Art and Science

To tide over ocean-red competition, a leading European grocer operating in a highly price sensitive market made a bold promise of lowest price guarantee to its customers. However, their reliance on manual price changes to respond to competitor prices greatly limited their ability to analyze and execute price changes at scale.

Algorithmic interventions across their business processes enabled the machines to ascertain patterns invisible to humans. It helped merchants analyze 100s of linkages for each item and simulate multiple scenarios of the impact of price, empowering them to choose the best strategies/recommendations (whether they want to match prices to a competitor or set prices higher or lower) with confidence. Thus, the combinatorial power of humans and machines helped the retailer drive price optimization at scale. The retailer was able to keep its promise of lowest prices by responding to competitor price changes in less than 10 minutes (earlier it took 5-6 days), without eroding on margins and giving items for free.



Space Optimization

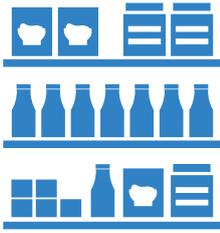
Space optimization happens at many levels in most organizations. Typically, the first level is an optimization run that will help to decide fixture plans (freezers or gondolas). This run is often executed on square footage space to allocate the top-down view of a floor plan and is most applicable for new stores or remodeled stores. The next step is typically to optimize space within the department, letting the categories compete for linear space. Here, retailers are looking at how they should allocate space for maximizing shopper impact within the stores.

Case Study: Making Every Square Foot Count Using Intelligent Store Planning

A leading US retailer was making huge investments every year to remodel thousands of stores, but still had to contend with a drop in store space productivity and losses in billions of dollars. Space planning was largely a manual process impacting lead times, causing plans to become outdated even before implementation. Further, planners often ignored the various dynamics in a specific trading area, resulting in non-localized layouts.

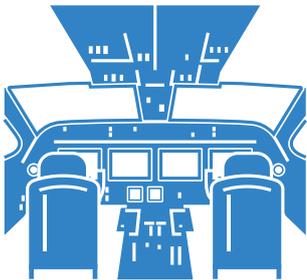
AI models such as deep neural networks, machine learning models, and classification algorithms were trained to unearth hidden patterns across the big data sets. The algorithms then used these insights and patterns to generate optimal space recommendations for over a million store-category combinations within a matter of seconds.

The interplay of art and science allowed the retailer to bring down the space planning lead times from nearly six months to a couple of weeks, ensuring that the stores reflect the latest customer trends and local market dynamics. The scale and speed offered by AI and modern architectures ensure that the plans are hyper-localized, taking into consideration the innumerable intricacies of a specific trading area such as attributes in a particular locale, supply considerations, vagaries of weather (particularly nonseasonal/outlier weather events), and market dynamics with the various competitors. Instead of having to focus on mundane pattern-recognition tasks, planners can now try upto eight times the number of strategies and layouts as compared to earlier. The space productivity gains were a significant 5–7%, given the capital locked up in the retailer's brick-and-mortar stores.



Assortment Optimization

Assortment optimization is arguably the most data-rich decision that a merchant must make. This decision combines all the datasets previously mentioned and will dictate how the total strategy reaches the customers. To make the best decision, a merchant needs a mechanism to weigh all the inputs to determine the most profitable, productive mix for each store or group of stores. Additionally, the merchant needs to apply visual and strategic constraints onto the optimization to help the algorithm produce an assortment that is shoppable and understandable by the customers. This can be a rule to ensure that the assortment includes items from the good-better-best brands, or a rule that there can only be large bags on the bottom shelves due to fixture weight capacity.



The Merchant's Personalized View

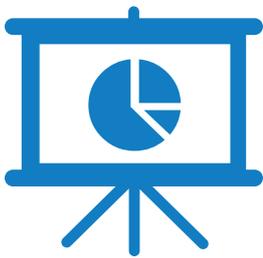
While there are productivity and tool advancements in the areas of pricing, competitive pricing, assortment optimization, and even space optimization, these activities remain largely isolated within the reset calendar. If we go back to our cheese promotions example, we can see that if the questions raised are answered in isolation, they will only give a point-in-time answer. But, if looked at concurrently, a system can help recommend a more impactful and profitable strategy.

Personalization is not just for consumers; merchants want it too. In addition to the power of concurrent optimization, the digital merchant can also solve many of the process challenges arising from different business types and different styles of the merchants as individuals. For example, a meat buyer needs to analyze the category with variable weights, whereas a cereal buyer has a more consistent unit of measure for analysis. By putting all the capabilities in one place, a structured workflow can be established that not only satisfies the need to follow the reset calendar, but also ensures that there is consistency in the robustness of data and capabilities leveraged. Alongside the merchandising activities, having an intelligent workbench for the merchant also allows for better decisions and integrations with supply chain. Supply chain parameters such as replenishment frequency, picking multiples, and case packs can now be modeled and analyzed earlier in the process. The result is a more agile and nimble handshake between merchandising and the supply chain.



Playing Intrapreneur and Storyteller

Today, merchants are not only intrapreneurs responsible for the growth and profitability of categories, but also aspiring storytellers. AI and digital technologies can simplify a merchant's life by helping them understand the preferences of each customer/household, which typically varies based on location, occasion, and environment. Additionally, AI learns and adjusts itself when customers start behaving differently. AI solutions that are not black box solutions help merchants to see the not so obvious relationships and derive interesting insights, helping them understand the rationale for the assortment mix and price points. This makes it easier for them to tell their category story of why and how items will drive traffic, complete baskets, and increase basket size for targeted customer segments.



Conclusion

Retailers have a great opportunity ahead with the most valuable asset: commercial-intended consumer behavior data. They have the possibility to unlock exponential business value out of that data, with the final aim to convert them into effective omnichannel strategies that could boost benefits for every brand and every supplier, and create new business models and services.

“Leveraging AI-based solutions is the only way to help teams pivot from execution to strategy.”

Shankar Narayanan

President and Global Head of Retail, CPG, Travel & Hospitality, TCS

“Algorithmic interventions will help merchants to become advanced strategists instead of data wranglers and pivot from execution to strategy. They can move away from traditional calendar-based category resets with AI and offer assortments aligned with market dynamics and shifting customer preferences,” summarizes Shankar Narayanan, President and Global Head of Retail, CPG, Travel & Hospitality for TCS.

About TCS Retail

TCS Retail partners with over 100 global retailers, driving their growth and digital transformation journeys. We are solving their toughest challenges by harnessing our deep consulting and technology expertise, amplified by strategic investments in products and platforms and research partnerships with top universities; a co-innovation ecosystem of over 3,000 startups; and Nucleus, our in-house innovation lab.

Retailers worldwide are adopting the TCS Algo Retail™ framework, a playbook for integrating data and algorithms across the retail value chain, thereby unlocking exponential value. Our solutions and offerings leverage the combinatorial power of new-age technologies to make businesses intelligent, responsive, and agile. TCS' portfolio of innovative products and platforms include AI-powered retail optimization suite TCS Optumera™, unified commerce platform TCS OmniStore™, and AI-powered enterprise personalization solution TCS Optunique™. With a global team of 40,000 associates, we are powering the growth and transformation journeys of leading retailers worldwide.

Contact

For more information on TCS' Retail Solutions and Services, please visit <http://on.tcs.com/TCS-Retail>

Email: algo.retail@tcs.com

About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services is an IT services, consulting and business solutions organization that has been partnering with many of the world's largest businesses in their transformation journeys for over 50 years. TCS offers a consulting-led, cognitive powered, integrated portfolio of business, technology and engineering services and solutions. This is delivered through its unique Location Independent Agile™ delivery model, recognized as a benchmark of excellence in software development.

A part of the Tata group, India's largest multinational business group, TCS has over 4,43,000 of the world's best-trained consultants in 46 countries. The company generated consolidated revenues of US \$22 billion in the fiscal year ended March 31, 2020 and is listed on the BSE (formerly Bombay Stock Exchange) and the NSE (National Stock Exchange) in India. TCS' proactive stance on climate change and award-winning work with communities across the world have earned it a place in leading sustainability indices such as the Dow Jones Sustainability Index (DJSI), MSCI Global Sustainability Index and the FTSE4Good Emerging Index.

For more information, visit us at www.tcs.com

All content / information present here is the exclusive property of Tata Consultancy Services Limited (TCS). The content / information contained here is correct at the time of publishing. No material from here may be copied, modified, reproduced, republished, uploaded, transmitted, posted or distributed in any form without prior written permission from TCS. Unauthorized use of the content / information appearing here may violate copyright, trademark and other applicable laws, and could result in criminal or civil penalties. **Copyright © 2020 Tata Consultancy Services Limited**