ALGONOMY

Algorithmic Decisioning

Retail's Next Begins Now

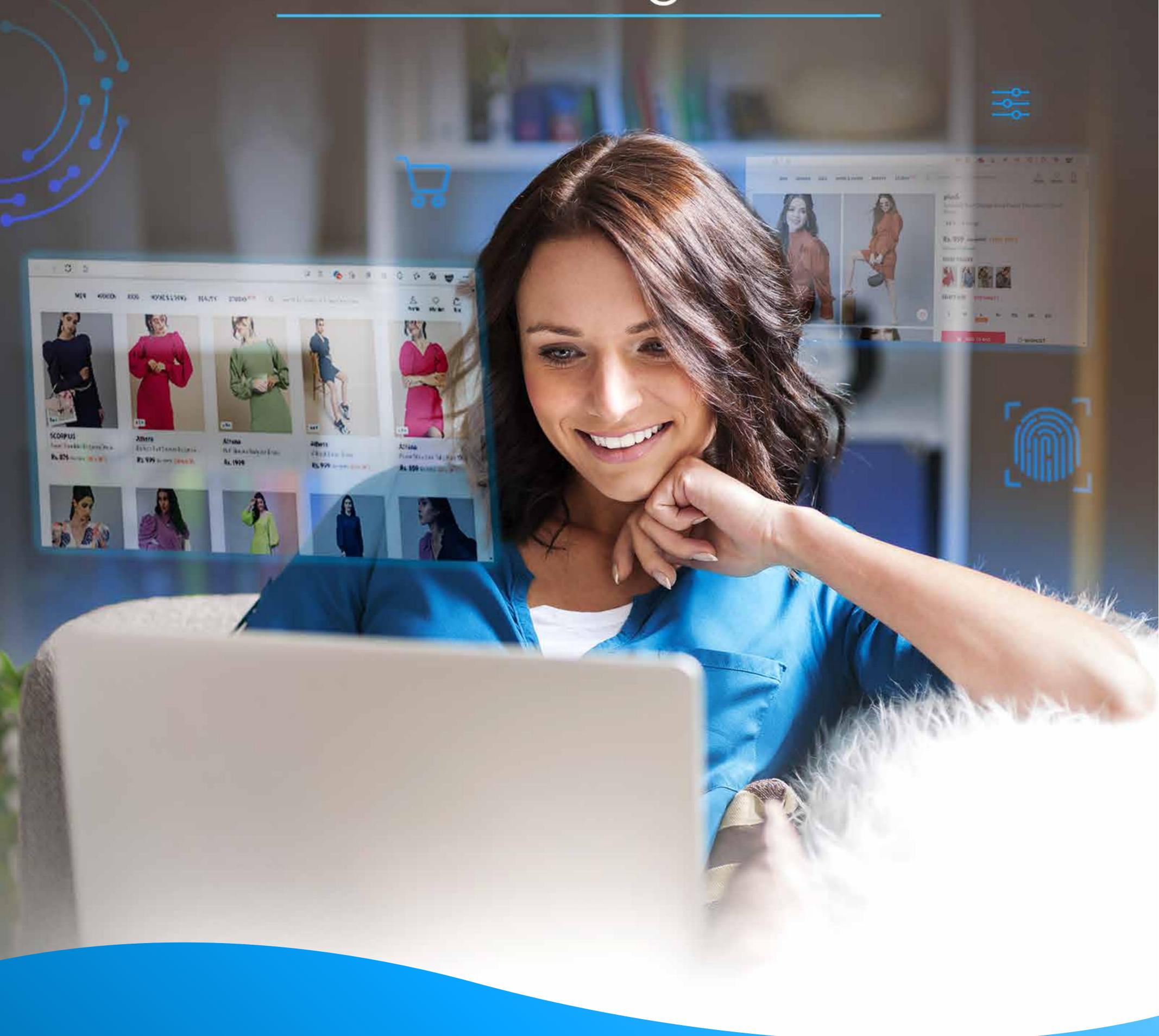


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What Is Algorithmic Decisioning?



Channels are dead. Omnichannel experiences are now non-negotiable.

Retail technology investments saw a 300% YoY increase in Q2 '21 to \$31.5 billion, as more consumers turned into omnichannel shoppers.¹

Consumers are no longer following a linear path to purchase. Retailers are trying to solve the pressing issues of broken customer journeys and inconsistent engagement. And these issues are common when a consumer switches between different online and offline channels—a behavior that has become commonplace in the post–pandemic world.

Today's channel-agnostic consumers expect to be able to seamlessly switch between channels. They expect to progress in their journey without friction points such as repeatedly having to specify their current need, price point, brand or taste preferences, and so on.

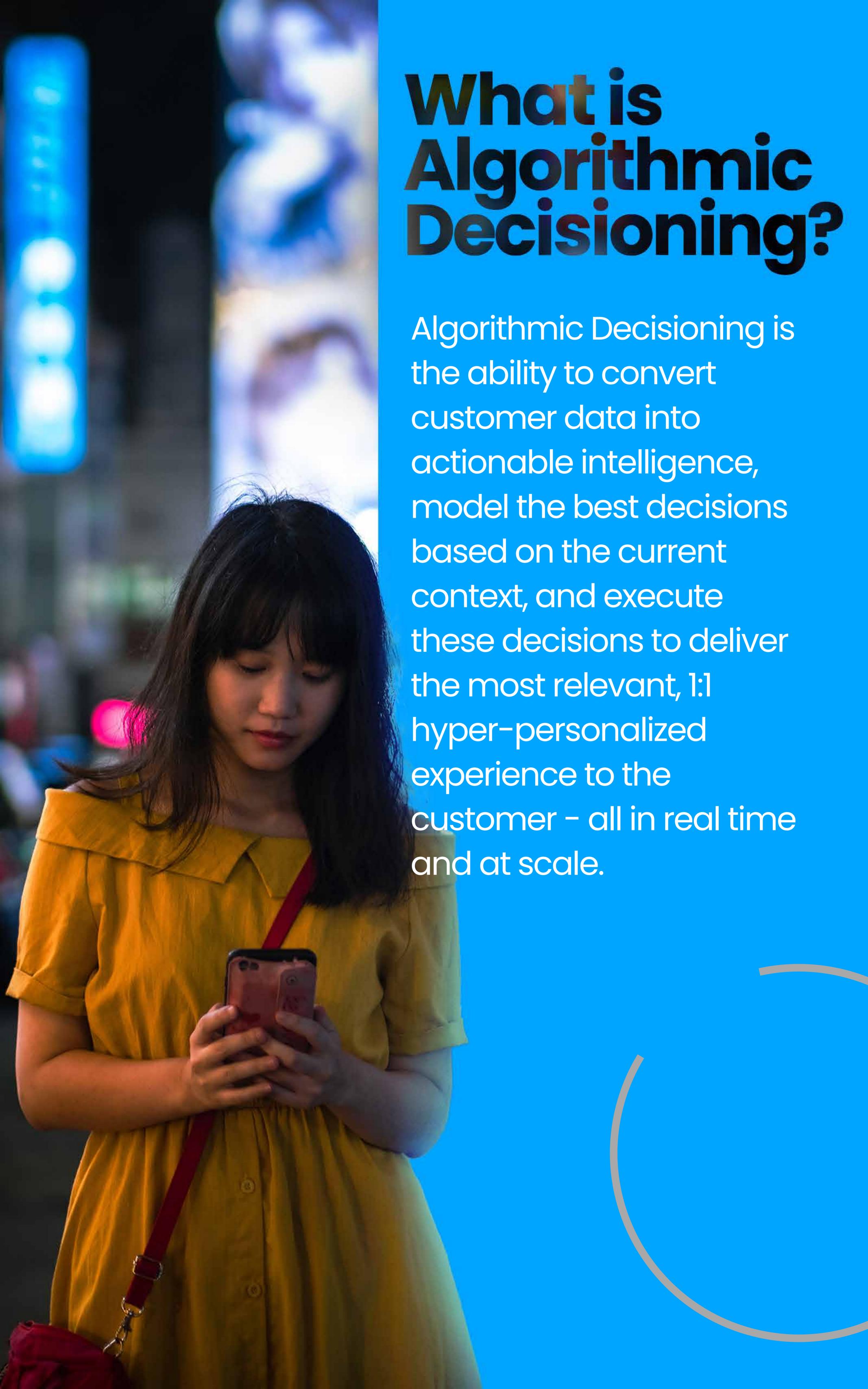
Now, retailers across key functions face the challenge of making countless decisions and course-correct as context changes. What products to recommend, what is the right assortment mix for the season, what items to restock, how much to sell them for, and when and how much to mark down are some of these crucial decisions that impact customer experience, profitability, and key business metrics.

Another key challenge that retailers face today is the inability to personalize an experience as per a consumer's real-time

intent and context. According to a Forrester report, personalization ranked the highest in the list of tech investments in 2021.² In fact, 89% of digital businesses are investing in personalization.³ But there's a problem. Only 40% of consumers feel that the information they get from brands is relevant to their tastes and interests, revealed Brendan Witcher, VP & Principal Analyst, Digital Business Strategy, Forrester at Algonomy Customer Summit 2021. This massive gap exists because personalization has evolved from tactical segmentation to strategic individualization, and most retailers are playing catch-up.

To solve these challenges, retailers must adopt a more forward-looking approach to decision-making. Point solutions don't cut it, as they hinder retailers from future-proofing their digital strategy, creating new competitive advantages to remain relevant, and staying ahead of ever-evolving customer behaviors. What's needed today is Al-powered decision-making at scale across marketing, eCommerce, merchandising, inventory management, pricing, and other retail functions. Enter Algorithmic Decisioning.



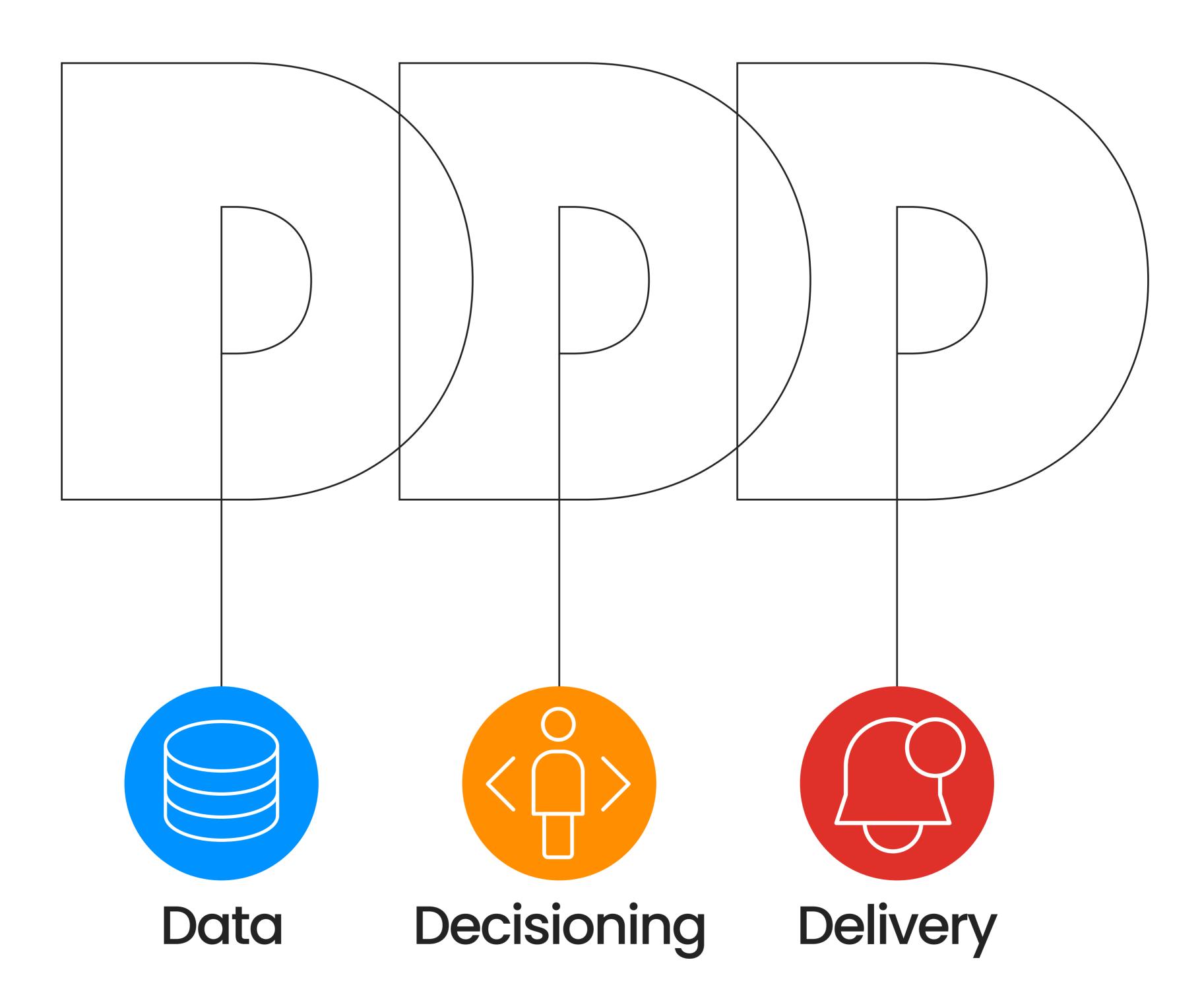


The 3 Ds of Algorithmic Decisioning

Retailers are no strangers to big data and analytics. This technology and practice has been a focus area for the better part of the last decade. But the problem even today is, most companies are using data (if at all) to make tactical business decisions. They are often reactive, rather than proactive with their data strategy. Retailers are at best data-driven, when they can be decisioning-led.

Algorithmic Decisioning helps retailers solve this problem by helping them devise and implement a more holistic data strategy. Let's dive into its three Ds to understand how.

The 3 Ds of Algorithmic Decisioning





Data

It is common for retailers to have separate systems in place for point-of-sale, eCommerce, loyalty, etc. All these systems may have important insights on shopper engagement. By unifying customer data across all offline and online channels, retailers get a unified, 360-degree view of the customer - rich with insights derived from every interaction across every touchpoint.

A unified customer view enables retailers to know their customers as individuals. In addition to their demographic information, retailers gain insight into not just a consumers' individual preferences for products, brands, channels of communication, time of engagement, loyalty and reward system response, typical order value, but also know their stage in the lifecycle, their churn probability, expected lifetime value and more. Marketers can use this intelligence to craft campaigns aimed at specific audiences and outcomes. For example, a retention campaign for high-value customers that are at risk of churning.

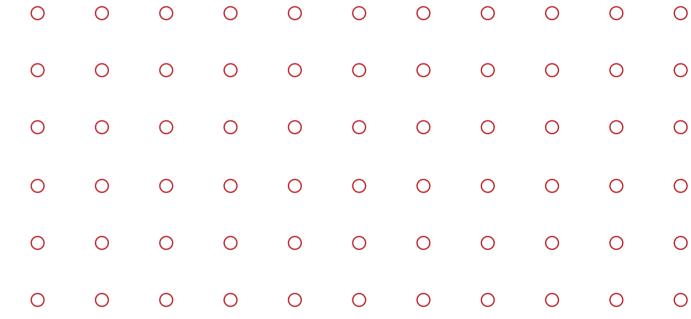
A multinational conglomerate that is a master franchise for many world-renowned brands—by unifying data across brands,

online, and offline systems—was able to get a deep understanding of not only how customers engaged with a particular brand but also their motivations behind purchases. The company used this intelligence to run cross-brand promotions that resulted in increased offer take up and revenue.

Learn more here.

Juxtaposing contextually relevant information with behavior across the customer lifecycle helps retailers gain insights to inform their next best actions, thereby improving the accuracy of their decisions to a great degree.

Say a customer has historically bought trending fashion but during the current purchase, she has added maternity wear to the cart. The brand could leverage this information to change the offer or product recommendations to one that would complement maternity wear – a diaper bag perhaps. A unified customer view that provides real-time information on behavior therefore helps brands be relevant in their engagement.





Decisioning

In a day and age where customers expect contextually relevant experiences in the moment, retailers must equip themselves with tools and technologies that enable them to meet this expectation. Retailers have a large amount of customer and business data. But to create value, they need to be able to derive actionable insights to recommend appropriate decisions. They need an intelligent decisioning layer powered by AI to make this possible.

Al helps make millions of accurate decisions in real-time owing to its ability to read and analyze enormous volumes of data in milliseconds.

An AI-powered decisioning engine supports continuous algorithmic testing, ensuring that the right decisions are being made autonomously. It continually tests and evaluates various recommendation strategies to determine the winner for each user interaction while considering the business goal. The engine can adjust to the subtlest changes in customer behavior, inventory levels, regional trends, pricing, etc. What's more, it provides business users complete transparency into why a decision was made.

For instance, retail marketers can continuously assess and re-calibrate customer journey performance to drive higher conversions and optimum purchase trajectories. They can run A/B testing and algorithmic testing and optimization to

identify the ideal creative treatment, headline, copy, send time, and channel mix that will elicit the maximum response from the customer.

Today, customers expect to be served as individuals whether it is while shopping online, in store, or while interacting with customer support agents. They expect relevant recommendations and search results based on their tastes, offers and content that align with their need, and communication that is useful to them in their preferred channel and at the right time. To cater to this, retailers need to make intelligence-infused decisions while the customer is in their journey.

For example, a decisioning engine reads and understands the profile, affinities, and behavior of the customer. It also reads and understands the products and offers currently available. With this knowledge, the Al algorithms make relevant product and offer recommendations.

A customer who usually buys a meal for one getting a BOGO offer on hamburgers has no use for it. Instead, they'd appreciate a 20% off on their favorite meal. A family diner, however, would love that BOGO offer. The AI engine makes the right decisions based on historical data and current context. A large pizza franchise, using deep customer insights, hyper-personalized their marketing campaigns to achieve a 16.5% increase in average recency and an 8% increase in sales. Learn more here.

Speaking of merchandising, retailers have data on stock, historical transactions, price, weather, holidays, and other events.

However, it is hard to interlink all this demand and supply data to make the right decisions, especially when it needs to be done in real time and at scale. With a decisioning engine, algorithms analyze all this information and make precise demand predictions at a product sub-category level for a particular store, for a particular week. This helps improve full-price sell through and minimize loss from over or understocking.



Delivery

Once the Al's decisioning layer converts data into insights and recommends the best decisions, it's time to execute these decisions. This requires personalized orchestration that pushes the output of the decisioning engine in the form of contextually relevant, real-time engagement on the right channel.

For example, a multi-brand conglomerate with franchise of a leading coffee chain as well as a global baby care brand unifies data across both brands to have a single view of the customer. The Al algorithms detect a pattern that a customer prefers a certain coffee and is a regular customer of the baby care brand as well. The algorithm also knows that the customer regularly purchases baby care products from Location A. Using the geo-location capability in the personalized orchestration solution, the franchise sends an SMS offer on coffee at an outlet in Location A when the customer makes a purchase at the baby

care outlet, for that desirable in-the-moment connect. This entices the customer to make a purchase, thereby increasing conversion rate and revenue.

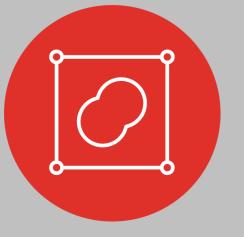
When demand and supply are connected, algorithmic decisioning becomes further enriched. With merchandising integrated, the offer on coffee that is sent to the customer is not only based on what the customer prefers but also based on the decision that a particular flavor is overstocked and needs to be marked down for a faster sell through.

Algorithms therefore help retailers create delightful and memorable experiences for customers. They also understand the macro-level changes that the customer is experiencing in their life.

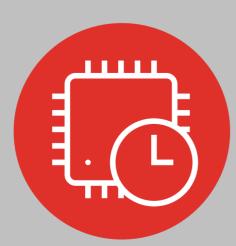
For example, a boy who has been purchasing casuals, denim, and sneakers from a retailer for a couple of years has begun purchasing office wear, formal shoes, and suits. Algorithms can detect the change in the buying pattern and recommend an offer on a suit instead of denim. Algorithmic Decisioning not only enables a real-time connect with the customer but also supports lifecycle engagement, thereby delivering a consistently high standard of customer experience and increasing lifetime value.



Retailers should therefore ask themselves three questions to assess their Algorithmic Decisioning maturity:



Are we able to combine customer context across stores and digital channels?



Are we able to decide on what's the most relevant experience for a customer in real time?



Are we able to deliver individualized experiences everywhere – across all channels and touchpoints?



The 'Experience Economy' Is More Relevant Than Ever

Businesses today fail to create new competitive advantages because of digital sameness. Retailers often settle for "good enough" consumer experiences instead of striving to take them to the next level through personalization that is real-time and individualized. Since most businesses think this way, their collective inaction has resulted in digital sameness. As a result, the majority of consumers don't think much of their digital experience.

Brendan Witcher from Forrester, at the Algonomy Customer Summit 2021, revealed that 65% of customers say their CX is 'Ok', only 17% think it's good, and no one rates it as excellent.

'Ok' experiences don't create competitive advantages. It's important to note that each time a consumer is exposed to an improved digital experience, their expectations are reset to a new, higher level.

We live in a world where consumers have an infinite number of brands to choose from. Due to the rapidly growing competition, product differentiation and price advantage are hard to come by. In this scenario, the ability to deliver hyper-personalized customer engagement is and will continue to be the key differentiator.

Customer Loyalty is Conditional

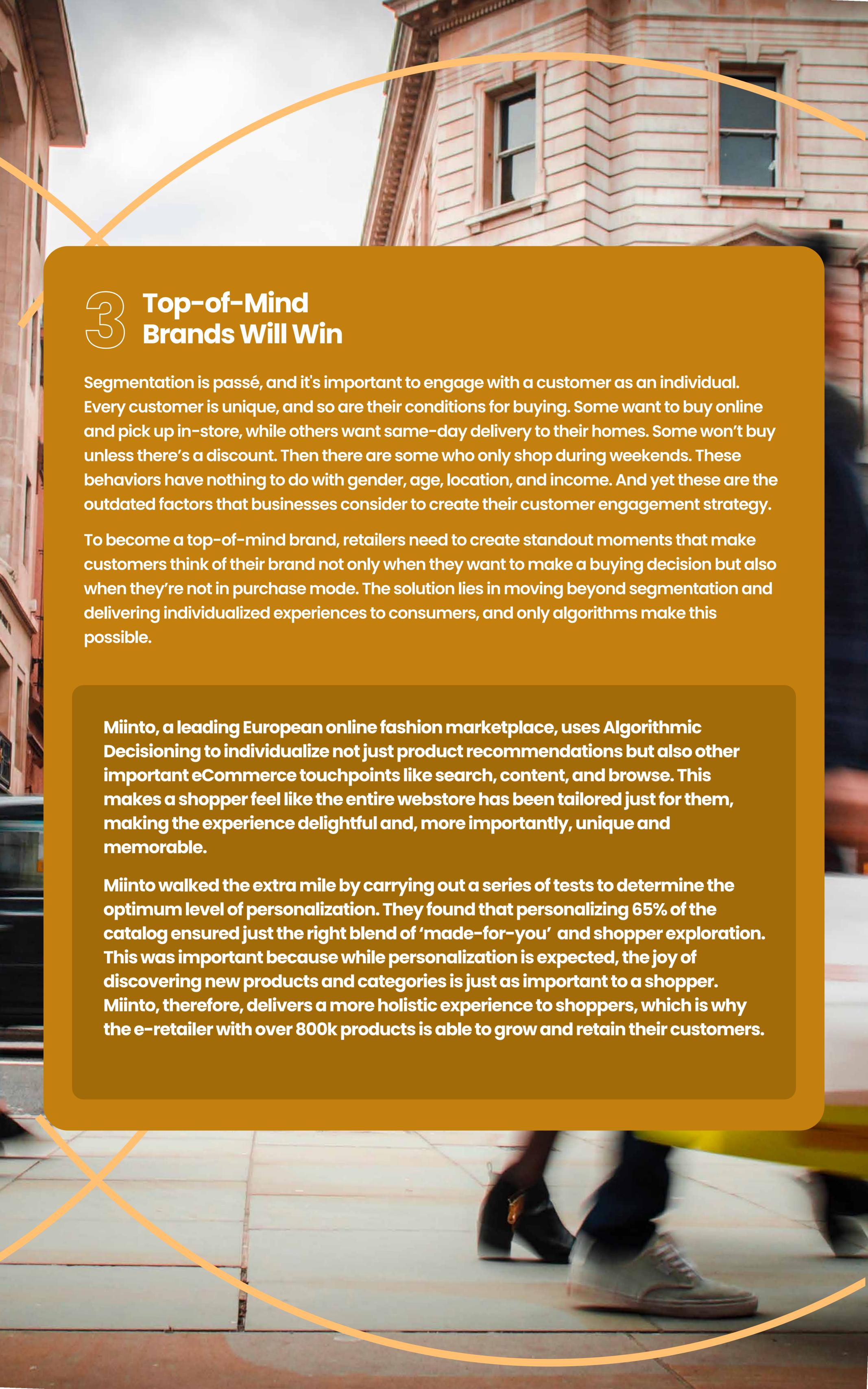
Most brands know who their customers are, but they don't know why they buy from them. Brendan Witcher, VP & Principal Analyst, Digital Business Strategy, Forrester, in his keynote session at Algonomy Customer Summit 2021, talked about a recent project where he asked the executive team of a company why their customers buy from them. They said customers are loyal to their brand because they love their high-quality products and think the brand aligns with their shopping values.

Interestingly, when he interviewed a set of their best customers, they said they would completely stop buying from the brand if they didn't live near their store, even though the brand has an eCommerce website. In this case, the 'why' is the convenience of the store being nearby and has little to do with the products.

Customers won't think twice before switching to a different brand if it means they would get a superior experience around convenience, product discovery, decision–making, fulfillment, etc.

Speaking of fulfillment, a McKinsey study revealed that 60% of consumers in the US experienced out-of-stock items in the period of September through November, 2021. Out of these people, only 13% waited for a restock, while 39% switched brands or products and 32% switched retailers.⁴

Algorithms not only help retailers understand the 'why' behind a customer's behavior but also ensure that supply meets demand.



How Algorithms Create Value at Every Stage of the Customer Journey

Exploration

What Algorithms Do

Aid product discovery.

Save time, sparing Diana the effort of digging deep into the catalog to find products of interest.

What the Experience Looks Like

Diana uses

eCommerce search to look for headphones. The results show Active Noise Canceling (ANC) headphones based on her past behavior and intent.

Interest

What Algorithms Do

Keep the engagement going with offers that nudge Diana down the purchase funnel.

What the Experience Looks Like

In addition to product recommendations,
Diana sees helpful content - an article on the top five ANC headphones as well as videos from top tech reviewers.

Selection

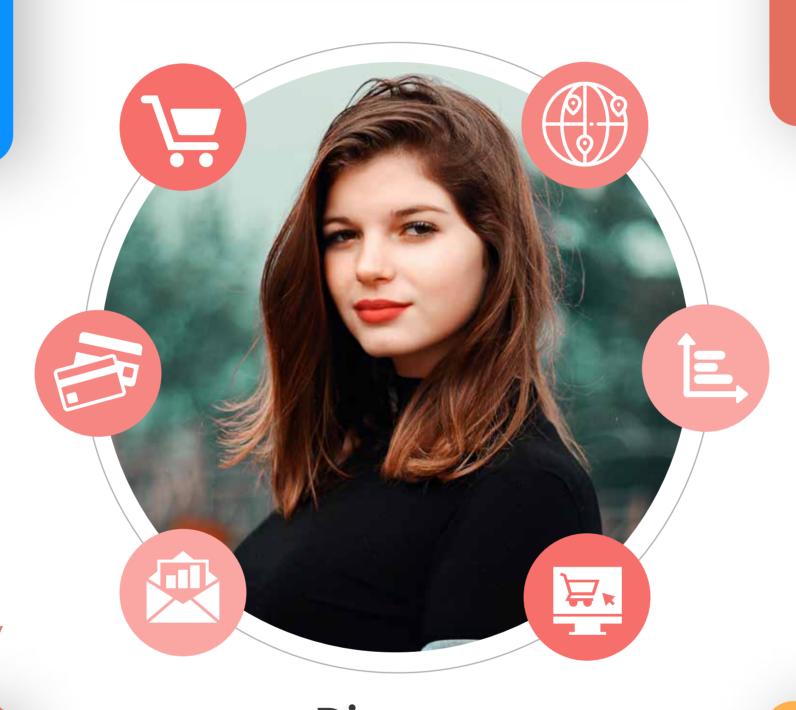
What Algorithms Do

Hyper-personalize the catalog based on not just the Diana's preferences but also her affinities and current context.

What the Experience Looks Like

Diana applies filters related to price, features, and other preferences.

She shortlists three products from the recommendations and checks their product pages.



Diana

Purchase

What Algorithms Do

Keep the engagement going with offers that nudge Diana down the purchase funnel.

What the Experience Looks Like

A few hours later, Diana gets an email reminder about the product in her cart, along with a coupon code for a 10% off that expires in 12 hours.

She redeems the coupon and completes the purchase.

Decision

What Algorithms Do

Reduce decision-fatigue. Show Diana information on possible stockout situations and product popularity in the form of social proof and urgency messaging.

What the Experience Looks Like

Diana picks a product, informed by the social proof/urgency message on the Product Detail Page (PDP).

The message indicates that the product is the most popular in its category and is likely to sell out in 2 days.

She is convinced and adds the product to the cart. But she doesn't proceed to checkout.

Loyalty

What Algorithms Do

Send personalized offers and promotions based on Diana's journey stage.

Improve customer retention and loyalty.

What the Experience Looks Like

A week later, Diana gets an email with a limited-time offer on a high sensitivity microphone that's compatible with the headphones she'd purchased. She buys the product.

How Algorithms Help Retailers Across Every Key Function

Commerce



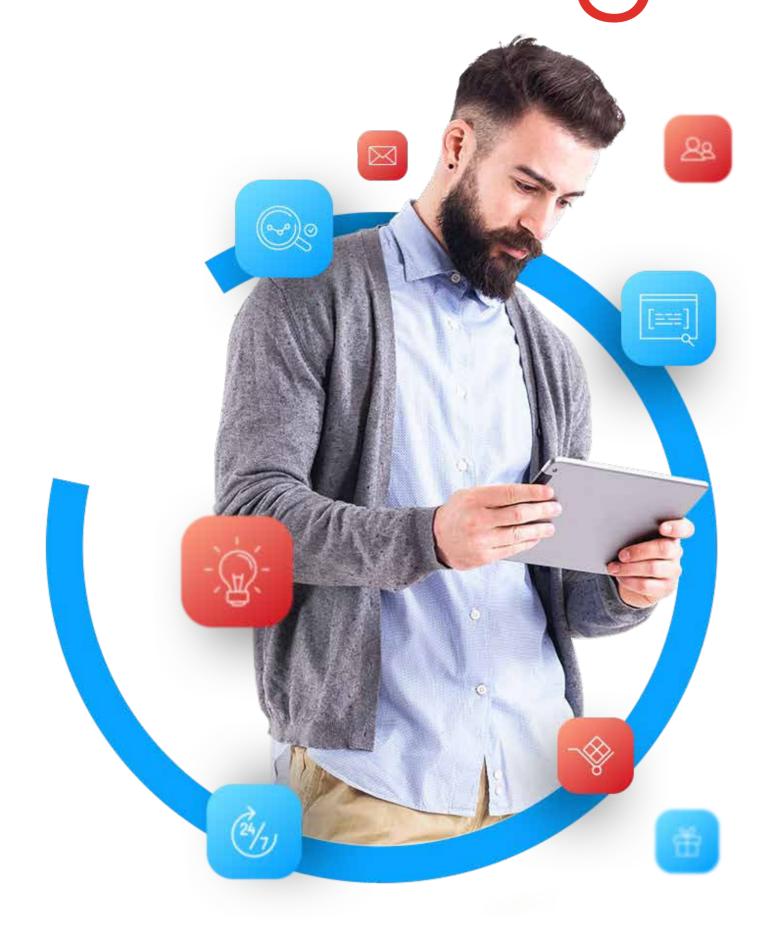
It's a tough job to drive traffic, conversions, margins, and basket size - all without compromising on the customer experience and repeat visits. Then there's collaborating with the marketing team for content and campaigns, and with merchandisers to curate the right products across the webstore pages.

There are so many decisions to make - all strategic, tactical, and in-the-moment. With self-driving algorithms, however, commerce leaders can:

- Create a unified, seamless experience across search, recommendations, category pages, content, email, and offline channels
- Hyper-personalize search results and category pages based on behavioral data,
 such that no two shoppers see the same results
- Help shoppers find visually similar products and provide complete-the-look recommendations based on product images, without manual merchandising
- Fill recommendation gaps even for products with no behavioral data and fast-changing catalogs
- Pre-load a customer's basket with items they're likely to re-buy and boost basket sizes

Aldi is using Algorithmic Decisioning using deep learning NLP techniques to surface more of their catalog, including newly launched products to shoppers without compromising on relevance, achieving 46% higher revenue per visitor and 10% higher average order value.

Marketing



The proliferation of marketing channels is resulting in enormous, ever-growing volumes of data. It's paramount to leverage all this data to integrate the customer, their intent, and context across stores and digital to make engagement decisions. Decisions that help deliver individualized experiences at the right time, on the right channel, at scale.

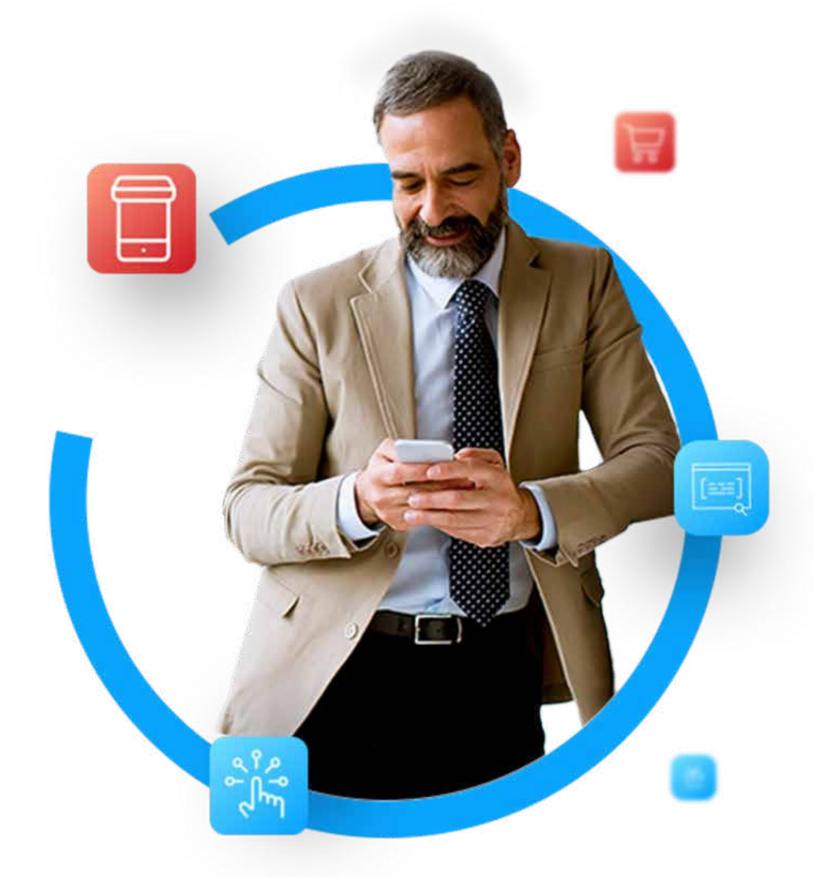
Algorithms translate data to results, enabling marketers to pivot from generic engagement to hyper-personalization, from rule-based communications to real-time interactions.

Algorithmic Decisioning empowers marketers to:

- Act on unified customer data across stores and digital for a single source of truth
- Drive real-time, journey-based engagement across email, SMS, stores, mobile app,
 online store, contact center, kiosk, direct mail, and social media
- Auto-discover micro-segments for hyper-personalized targeting
- Acquire new customers that resemble their star customers
- Grow loyalty and frequency through individualized interactions
- Spot and reverse churn behavior
- Algorithmically test campaigns and auto-optimize without manual A/B tests

<u>A major US supermarket chain</u> and a Forbes 500 private brand with over 100 stores achieved 3% incremental sales and 2x digital adoption with Algorithmic Decisioning.

Merchandising



There would be no retail if it weren't for merchandising, so why isn't anyone talking about it anymore?

- Rachel Shechtman, Founder, Manhattan-based concept store, Story.

Merchandising is at the center of the retail revolution. The new merchandising model is about creative ideas and differentiating customer experiences supported by intelligence. With algorithms, (e)-merchandisers can:

- Accurately forecast demand based on customer, economic, and social environment
- Plan assortments and availability across stores and digital channels based on customers' current and evolving needs
- Optimize markdowns to reduce inventory and margin erosion
- Steer insights-driven supplier collaboration by automating end-to-end processes, from onboarding and ordering to pricing and promotions
- Curate and segment merchandise for a hyper-local and hyper-personal experience
 Cap use Advanced Merchandising capabilities as a scalable method to mental experience
 - Can use Advanced Merchandising capabilities as a scalable method to manage cross-sell, up-sell, and complete-the-bundle recommendations online without having to manually merchandise every SKU
- Help online shoppers find visually similar products and provide visually similar complete-the-look recommendations, using product images, and even behavioral data is scarce

<u>A multinational conglomerate</u> leveraged Algorithmic Decisioning for merchandising, resulting in a 95% improvement in sales forecast accuracy, 12% increase in sell throughs, and 30% reduction in excess stock.

impressive 100 % increase in algital account growth.

Data an



Custodians of technology and innovation know that the next wave of growth in retail will come from being not data-driven but decisioning-led.

Algorithmic Decisioning helps data professionals:

- Leverage a lakehouse of structured and unstructured data for a single source of truth
- Use pre-built, retail-specific models to unearth deep insights for varying business needs and digital transformation strategies
- Get easy access to persistent, unified data for advanced investigation and custom analyses, with minimum data preparation
- Unify customer context and make it available across systems of engagement on both demand and supply sides
- Drive robust data governance with access control and encryption from a single point, eliminating the overheads of managing data governance on multiple tools
- Use architectures that can drive real-time and analytical workloads in a single unified platform
- Drive continuous testing, learning, and optimization as a platform capability that can be applied to any function and use case
- Leverage capabilities that can be easily integrated with the existing tech stack through API-based connectors

<u>Pizza Hut UK</u>, with Algorithmic Decisioning, enjoyed a whopping 92% efficiency gains with zero lag time in reporting and 100% data integrity across sales, operations, HR, and digital.

Investing in Algorithmic Decisioning: What to Look for in a Partner

Investing in Algorithmic Decisioning: What to Look for in a Partner

Whether you're considering Algorithmic Decisioning for the first time or feel the need to upgrade to a more sophisticated solution, getting your requirements right is the first step.

The process can be daunting, as it's hard to research and put together capabilities such that your investment is future proof. This checklist is intended to serve as a base set of capabilities that you should look for in enterprise grade vendors.

- Can the vendor's technology integrate data, context, decisions, and orchestration across retail?
- Does the vendor have a full stack to deliver Algorithmic Decisioning across demand and supply - marketing, commerce, merchandising, and operations?
- Does the vendor have the ability to fit into your tech stack with out-of-the-box connectors to systems and channels?
- Does the vendor cover use cases that are important to your business?
- Do they have adequate domain expertise and a proven track record of leading and innovating in this space?
- Does the vendor have real demonstrable products/solutions and not just ideas/frameworks/models?
- Do they provide out-of-the-box capabilities for your vertical?
- Is the solution easy to implement and use, with limited dependency on IT?
- Do they have a strong customer success track record?
 - Can the vendor deliver the scale and performance needs of your business?
- Does the solution provide visibility into Al's decisions (glass box model) and allow for business controls?
- Is the product's AI self-learning with the ability to update decisions in real time with respect to changing customer and business contexts?
- Does the product allow for performance monitoring and optimizations against KPIs that matter most to you?

The ROI of Algorithmic Decisioning Across Customer Experience and Operations

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swap.com

Swap.com Improves Product Discovery for Shoppers with Self-learning Search

Swap.com is the largest online consignment and thrift store in America with over 2 million unique items available for purchase.

The retailer realized that eCommerce search is not a mere tool that aids product discovery but a key lever for growth. The company used a self-learning personalized search tool. Its decisioning layer ensured that search results became more relevant and intelligent each time a shopper returned to Swap.com.

The technology delivered a 7.3% increase in conversion rate, the biggest increase the company has ever seen from introducing a new technology.



Big Y Drives Personalized Marketing to Better Engage and Delight Customers

Big Y is one of the largest privately-owned retail chains in New England and has been in operation since the 1930s. Headquartered in Massachusetts, the grocer is listed in Forbes Top 500 Private Companies.

Big Y was struggling with implementing and sustaining a data-driven, targeted marketing strategy. The company deployed Algorithmic Decisioning, which enabled them to create a unified view of customers across online and offline channels.

Algorithms helped create granular customer segments by applying RFM modeling. This helped understand customer journeys, identify products of interest, and utilize propensity models to gauge the likelihood to respond, buy, and churn. Armed with deep customer insights, the grocery chain adopted a personalized marketing approach that was curated to each customer's preferences, transactional behavior, lifecycle stage, and promotional activity.

Better targeting resulted in improved response rates and revenue. The company experienced an impressive 100% increase in digital account growth.





Blue Tomato Delivers Personalized Product Recommendations at Scale

Blue Tomato was founded in 1988 as a snowboard school by the former European Snowboard Champion Gerfried Schuller. Since then, they have transformed into a successful international board sport and fashion shop.

The growing breadth of Blue Tomato's product range had become a challenge for their existing recommendation engine. The engine had reached its maximum capacity to make automatic product recommendations.

The company turned to Algorithmic Decisioning that allowed for scale, with different algorithms continually challenging one another to deliver the most relevant product recommendations to each shopper.

Since the implementation, the value of the shopping baskets resulting from product recommendations has increased by 20%, with an average of one more product purchased by each customer.



A Multi-billion Dollar Retailer Improves Their Merchandise Planning and Operations

The retailer was facing huge challenges in its merchandise planning and operations due its multi-format, multi-brand, and cross-industry retail profile. They turned to Algorithmic Decisioning to gain deep insights for smart decisioning related to sales, inventory, price, and promotions.

Algorithms helped accommodate factors such as weather, promotions, events, inventory, etc. in sales forecasting, which was a challenge earlier. They were able to get a single view of inventory across stores, which helped prevent instances of stockouts and overstocking. Further, they were able to determine optimal markdowns.

Algorithms helped them improve sales forecast accuracy to 95%, increase inventory sell-thru by 12%, reduce excess inventory by 30%, and save a whopping \$20 million in losses in a year.

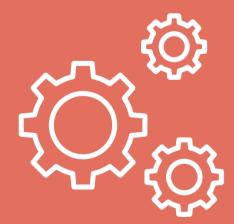


A Multinational Conglomerate Improves Customer Data Management

A multinational conglomerate, operating across 40 countries and driving over 30 businesses and 300 brands, was facing the challenge of siloed customer data. Their data was stored in disparate systems across various business units, which hindered them from deriving actionable customer insights.

The company deployed an Al-powered data management platform that helped them centralize all of their customer data and prepare it for analysis. With probabilistic matching algorithms, they deduplicated customer records to create a unified view of each customer. Further enrichment helped create Golden Customer Records, which gave an end-to-end view of the customer journey of over 5 million customers, cutting across the company's brands and business units.

Algorithms helped the company remove 300,000 duplicate customer records and build 450 micro-segments to drive omnichannel, journey-based customer engagement.

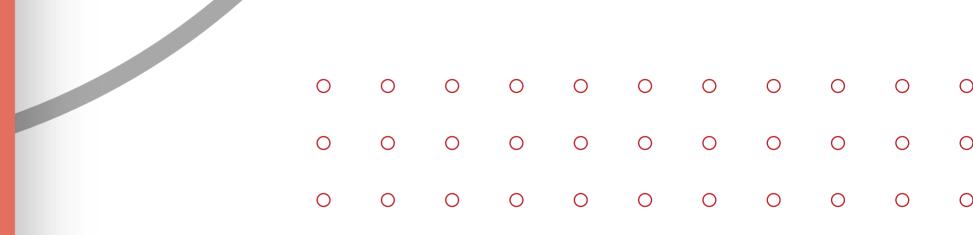


A Leading American Fast Fashion Retailer Improves Assortment Planning

The retailer faced challenges with their existing assortment planning processes. Assortment range and size planning required 840,000 man hours every month for 300+ product groups across stores. Ad-hoc merchandise size planning led to frequent out-of-stock instances and customer dissatisfaction.

The company adopted an algorithmic solution to automate the time-consuming process of assortment planning. Advanced AI algorithms recommended a demand-driven assortment breadth, depth, and size pack—minimizing markdowns, controlling inventory spendings, and delighting customers.

The implementation led to a 87.5% decrease in planning effort – 4 hours to 30 minutes per plan. They reduced overstock and understock by 4% and end-of-season leftovers by 2%. Further, they increased full price sell-through by 3%.



Conclusion

Retail is now real time. It is contextual and always changing in response to consumers' needs and behavior. Retailers should respond to each consumer's present context, and that requires unifying customer data and activating the journey in-the-moment.

To pivot to a customer-led strategy, retailers need to:

- Unify customer context across stores and digital channels
- Create the most relevant experience in real-time, everytime
- Hyper-personalize engagement at scale, everywhere

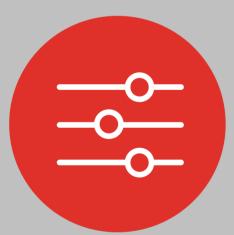
Algonomy offers a complete portfolio to deliver on the algorithmic vision. Positioned among leaders in data, decisioning, and delivery, we are ready for the world where the line between physical and digital has blurred. We are ready for digitally native consumers and shifting brand loyalties.



Here's why pioneering retailers and brands choose Algonomy:



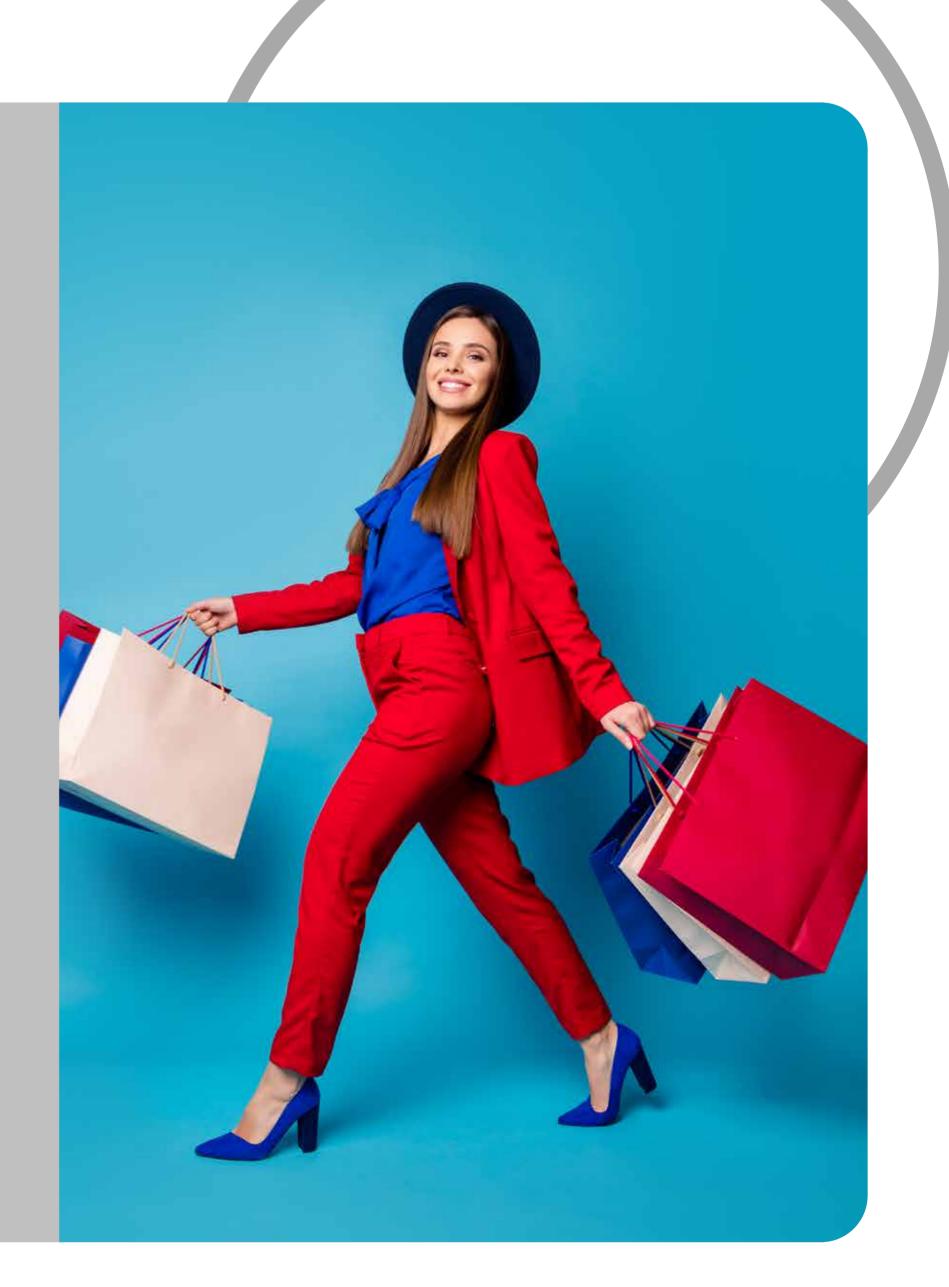
We personalize across the entire customer lifecycle on all digital channels and touchpoints, putting an end to fragmented experiences.



We are the only vendor in Algorithmic Decisioning, eliminating the need for manual rules with 1,000+ domain measures, pre-built models, templates, analytics, and KPIs.



We live and breathe retail. Our deep domain expertise and pre-built models deliver rapid time to value to our clients.



Connect with Algonomy to embrace Algorithmic Decisioning and seize every retail moment.

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ALGONOMY

Connect with Algonomy to embrace Algorithmic Decisioning and seize every retail moment.

Algonomy (previously Manthan-RichRelevance) empowers leading brands to become digital-first with the industry's only real-time Algorithmic Decisioning platform that unifies data, decisioning, and orchestration. With industry-leading retail AI expertise connecting demand to supply with a real-time customer data platform as the foundation, Algonomy enables 1:1 omnichannel personalization, customer journey orchestration & analytics, merchandising analytics, and supplier collaboration.









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