Customer Intelligence at Scale

How Customer Cosmos unleashes customer insights
to power retail decisions

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> **In theory, there is no difference between theory and practice. But in practice, there is.**
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> **- Albert Einstein**

In the current climate, retailers face the same problem with their Data and AI initiatives that are supposed to drive customer centricity. To that end, retailers strive to deliver relevant, contextual and personalized customer experiences. However, bringing that vision to life isn't easy, with high customer expectations, conflicting business priorities, data mismanagement across the enterprise, and on-the-ground execution challenges.

The problem is not lack of customer data. It's the lack of insights.

Despite significant advancements in analytics capabilities, retailers struggle to enrich customer data and extract deeper insights to drive personalization and customer-centricity.
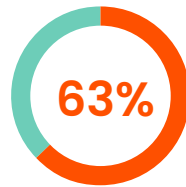
63% of marketing leaders continue to struggle with delivering personalized experiences to their customers.

Gartner
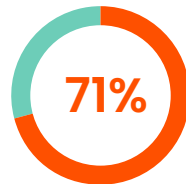
71% of consumers expect companies to deliver personalized interactions. And 76% get frustrated when this doesn't happen.

McKinsey & Company

The cause and effect

1. First-party customer data is fragmented across sources, making it difficult to profile customers online, in stores, and at other touchpoints. And third-party data is becoming increasingly difficult to use because of heightened privacy rules.

2. In a recent Forrester Marketing Survey, 45% of global B2C marketing decision-makers said that their biggest challenge with marketing execution is personalizing communications, experiences, and interactions. Unfortunately, most retailers don't integrate customer insights into their decision-making. Rather, they use basic propensity models/dated segmentation and purchase behavior to understand customers.

3. Dated segmentations lead to prioritizing customer segments that are already engaged.

4. Today, most customer models aren't rich enough, and there's a need for deeper customer insights like preferences, headroom, CLTV, journey, hobbies for advanced personalization strategies & deeper customer insights.

5. Current systems, processes, and feedback mechanisms are slow to scale customer experience, drive customer-centricity, enable real-time personalization, and don't support live interaction at critical disengagement points.

6. Lack of holistic measurement strategy on short-term metrics like visits and purchases, and not on long-term behaviors such as customers moving from inactive to loyal hurts personalization outcomes and customer engagement activities.
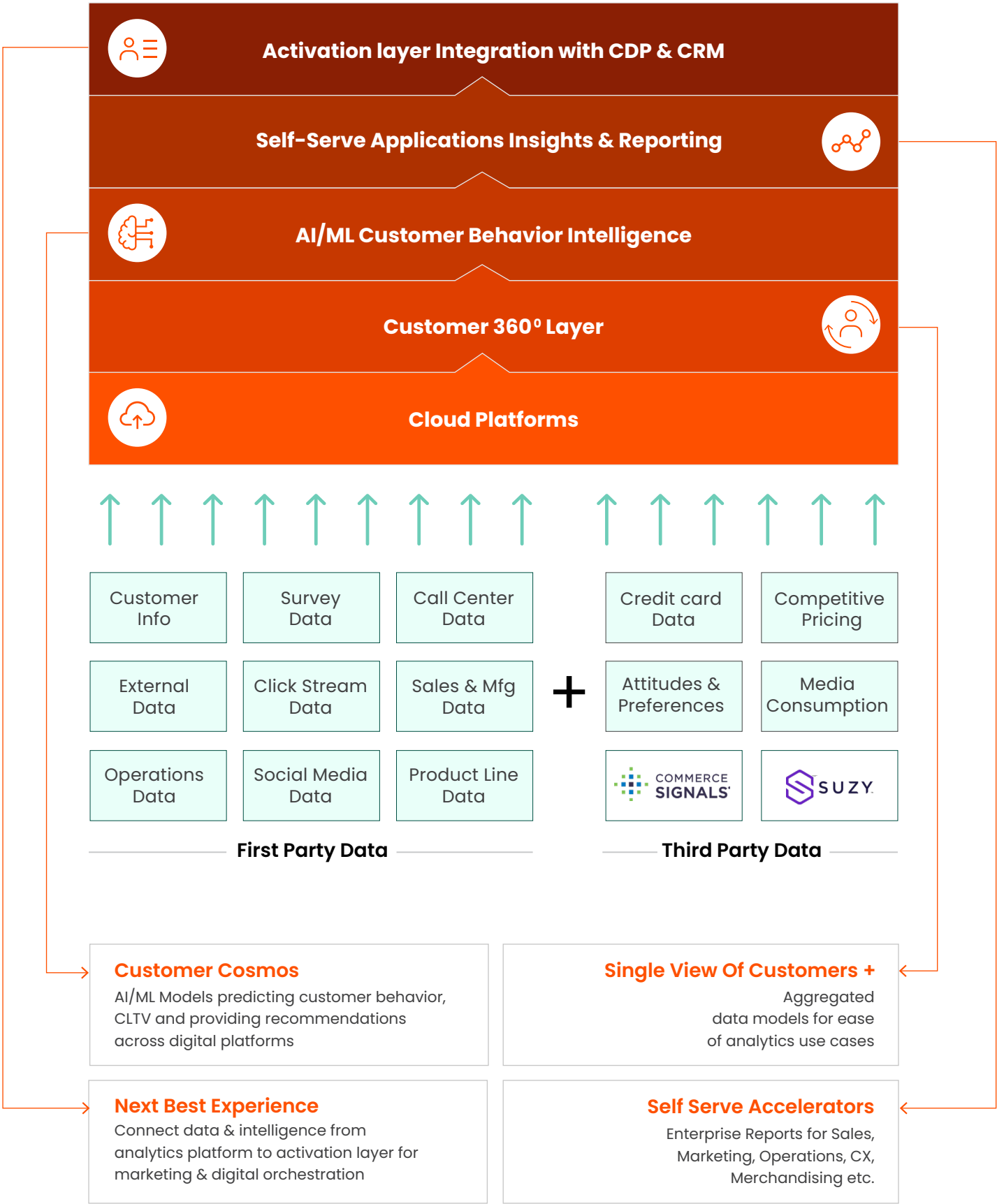
7. Most customer 360 and personalization solutions optimize for short-term outcomes like ROI and conversions, activate already engaged segments across limited touchpoints, but fail to orchestrate personalized messages across all channels.

Introducing Tredence's Customer Cosmos

Customer Cosmos is a powerful customer intelligence solution that **helps unlock the value of vast, untapped, and fragmented customer data providing the insights necessary for developing customer-centric strategies.** In addition, it allows retailers to leverage first-party customer data, data partnerships, and Tredence's proprietary ML models/algorithms to accelerate the multi-year personalization journey.

Unlocking the value of customer data: How does Customer Cosmos incorporate customer insights into every retail decision

Customer Cosmos is a purpose-built solution that **allows organizations to harness and build applications on customer data.** With all data in one place, multiple teams beyond marketing can create custom apps to personalize customer experiences.

Customer Experience Reference Architecture

Activation layer Integration with CDP & CRM

Self-Serve Applications Insights & Reporting

AI/ML Customer Behavior Intelligence

Customer 360° Layer

Cloud Platforms

First Party Data				Third Party Data	
Customer Info	Survey Data	Call Center Data		Credit card Data	Competitive Pricing
External Data	Click Stream Data	Sales & Mfg Data	**+**	Attitudes & Preferences	Media Consumption
Operations Data	Social Media Data	Product Line Data		COMMERCE SIGNALS	SUZY

First Party Data   **Third Party Data**

Customer Cosmos
AI/ML Models predicting customer behavior, CLTV and providing recommendations across digital platforms

Single View Of Customers +
Aggregated data models for ease of analytics use cases

Next Best Experience
Connect data & intelligence from analytics platform to activation layer for marketing & digital orchestration

Self Serve Accelerators
Enterprise Reports for Sales, Marketing, Operations, CX, Merchandising etc.

Customer Cosmos: How it works?

First, Customer Cosmos aggregates customer data across all first-party omnichannel sources and enriches it with third-party data. Using data, the solution creates 200+ attributes such as recency, app download, subscription, tenure, clickstream behaviors, and more to create a comprehensive feature store. Advanced data science models, including propensity, CLTV, headroom, and price sensitivity, among others, to enhance customer intelligence and deepen customer understanding.

Executing the entire process can be complicated and take several years in a traditional ecosystem; however, Customer Cosmos help businesses set up the customer 360-degree view and gather customer intelligence within weeks.

3 critical components of Customer Cosmos

We at Tredence know that data-driven personalization propels business outcomes and drives custom-centricity. Hence, customer intelligence must continuously evolve to keep pace with changing consumer behavior and buying patterns. We, therefore, bring together both powerhouses: Data models paired up by data engineering pipelines and AL/ML predictive modeling strategies.

Cosmos Data Model & KPI Stores

▸ Verticalized and Sub-verticalized Cosmos Feature Store across Retail, Telecom, Media, Insurance, Health etc.

▸ Conceptual data model diagram with foundational and consumption layer

Data Engineering Pipelines

▸ Standard SQL pipelines to get data from sources systems to foundational and consumption tables

▸ Prebuilt data quality frameworks to manage & maintain customer data

▸ Predefined attributes that follow industry definitions and best practices

AI/ML Predictive Models for Cosmos

▸ 80+ AI/ML models predicting various facets of customer behavior

▸ Prebuilt ML notebooks with modularized parameter tuning

▸ Headroom, Price Sensitivity, CLTV models leveraging advanced AI/ML algorithms

Customer Cosmos: Feature stores & data science models

With Customer Cosmos, you can build and create comprehensive metrics by utilizing data from omnichannel touchpoints and first-party and third-party data sources.

Additionally, you can gather, observe, and forecast consumer attributes in one location. Sample customer attributes for retailers are listed below. Based on the vertical and sub-vertical, this list can be highly customizable.

Retail use case

List of 360 metrics captured across omnichannel touchpoints

Customer behaviors
Interactions of customers such as transactional, digital, and marketing attributes.
e.g., recency, frequency, tap rate, emails open rate, time spent on website, coupons used, search's to add to cart, etc.

Customer profile & demographics
Omnichannel, app, loyalty, income, age, deal seeking, drive distance, tenure, marketing addressability, pet owner, homeowner etc.

Customer predictions
Propensity models across categories, brands, channels, affinity models, churn propensity, CLTV models etc.

Customer preferences
Food preferences like gluten, organic. Style preference like slim vs loose fit, payment preference, category preference, channel preference, booking preference, store preference etc.

Customer events
Graduation, prom, birthday, marriage, pet ownership, new home ownership, new parents, etc.

Customer innovation & next gen
Headroom potential, price & time sensitivity, share of wallet, brand loyalty, attribute ranking, brand shift propensity, likelihood to respond to marketing

Customer life cycle stages
Lifecycle stages new, habitual, repeat, churn, reactivated, loyal customers

Customer hobbies and interests
Music, photography, cooking, fitness, travel & outdoor, home improvement, etc.

Most use cases on the prescriptive and predictive attributes offers innovative marketing and personalization strategies to target the right audience with the right offer.

Customer Cosmos data science models

Propensity:
Forecasts customer purchase probability across brands, categories, channels, and time windows using purchase activity, digital activity, and interactions with first-party applications.

CLTV:
Helps determine customer future spend. It can be calculated based on engagement and spend. CLTV features are developed from 1st & 3rd-party data sources, such as loyalty, app interactions, digital adoption, and demographics.

Churn rate:
Predicts at-risk customers on the verge of churn. Marketers can maintain a consistent active base with churn models. Churn risk is calculated based on first-party, product affinity, and demographic data.

Next purchase date:
Estimates tentative purchase date/week/month. Organizations can better plan and offer incentives if the predicted date deviates from the current date.

Headroom potential:
Predicts the available spending potential using third-party credit card purchases, first-party purchases, etc. E.g., graduates moving to a new city have high headroom but a low CLTV.

Price sensitivity:
Predicts price sensitivity at the customer/item level using promotions, coupons, transactions, and add-to-cart data. Promo/coupon teams use this model to assign personalized offers and promotions.

Preference score:
Helps understand customer preferences by using transactions, purchases, and digital activity. Key preferences such as style, color, food, channel, and payment can be used to customize messaging/assortment.

These data science model outputs with table stake transactional/clickstream attributes offer multivariate relationships allowing for deeper customer understanding and advanced segmentation and personalization strategies.
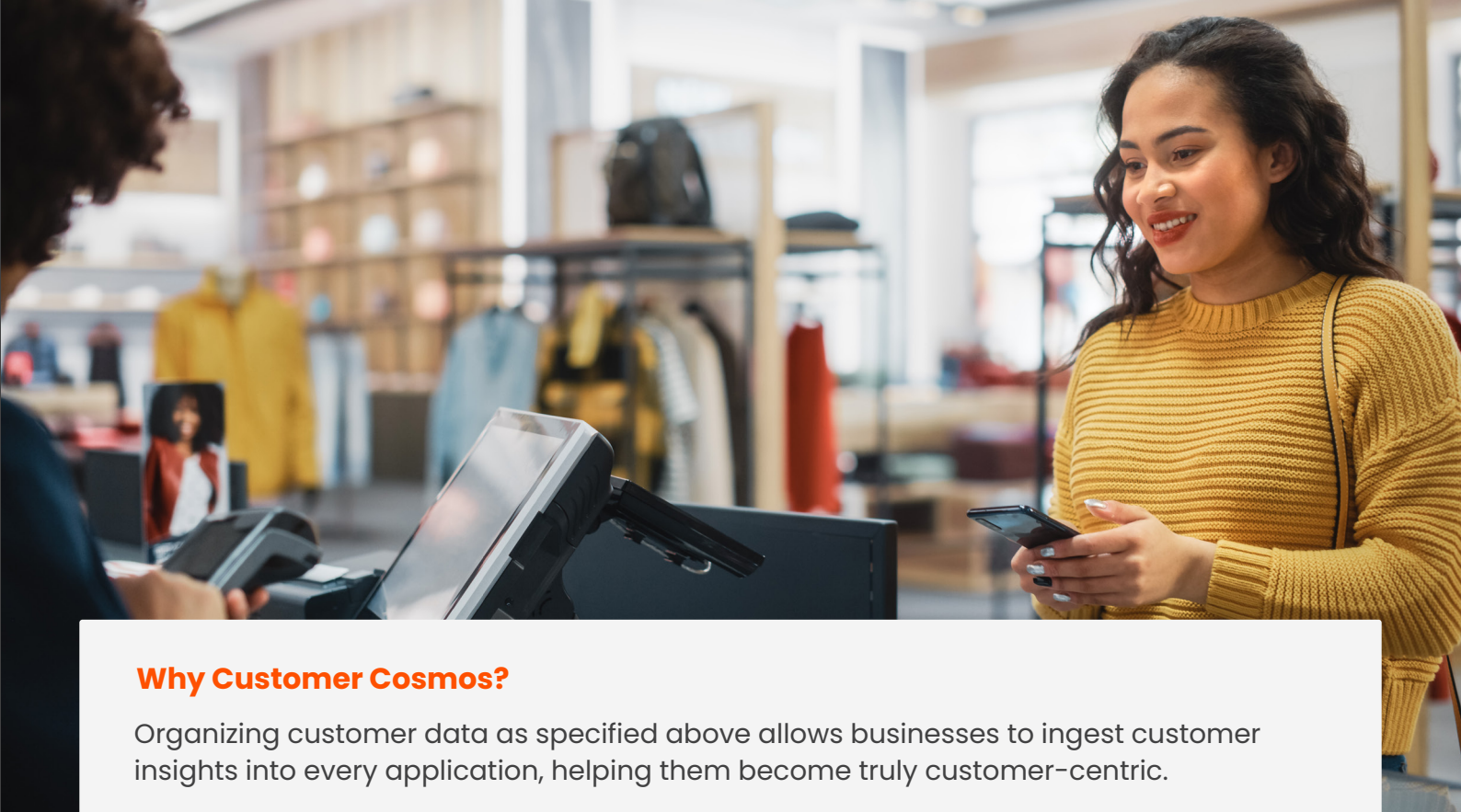
Why Customer Cosmos?

Organizing customer data as specified above allows businesses to ingest customer insights into every application, helping them become truly customer-centric.

Scales rapidly
With 200+ customer attributes defined, it's easy to access, open, and integrate with multiple customer apps like Salesforce, Zendesk, Cheetah, LiveRamp, etc.

Maintains data quality
Enhanced metric control and reporting and higher quality standards because of standardization of codes and alignment on attribute specifications supports data quality.

Improves customer intelligence
Customer intelligence keeps improving as new attributes are added.

Fosters data safety
Data security is better managed since data never leaves the ecosystem, and the tool is deployed behind the client firewall.

Fosters self-serve and reduces technical dependency
Pre-defined attributes are either integrated with activation/marketing platforms or democratized via BI tools to reduce dependency on a few individuals, leading to more customer-centric initiatives.

White box solution
The data science models, and engineering notebooks are highly configurable and completely white box, designed to build trust and reliance on customer data.

Reduced OpEx:
Customer Cosmos is designed to be deployed within the client environment, so existing usage/adoption of tech-stack reduces licensing fees/processing costs charged by SAAS solutions.

MLOps toolkit:
The advanced ML/data science models built via Cosmos have an integrated MLOps suite that helps in model monitoring & maintenance with limited overhead.

What can you do with Customer Cosmos?

Identify and reach untapped segments:
Identify untapped market segments based on proprietary headroom, customer lifetime value, and share of wallet. You can also segment the customers objectively for cross-sell and up-sell opportunities.

Drive customer retention through personalized marketing:
Identify and map the right audience to products/categories/brands based on predicted customer behavior. In addition, you can increase customer engagement and retention by customizing marketing content to consumers.

Media monetization strategy:
Connect 1:1 with your customers and measure the impact in real-time.
By identifying the trial and retention segments, you can build relationships with your customers in an omnichannel environment, meeting them at the right time and place.

Influence customer behavior through the next best action:
The next best action varies across customer segments. Customer Cosmos helps you develop the next best action strategies to influence customers throughout their life cycle. For example, you can influence customers' behavior by optimizing and sequencing omnichannel touchpoints based on headroom opportunity potential or CLTV.

Drive omnichannel customer experience:
Perform journey analytics and identify friction points. Since each customer's value system differs, and drivers of experiences cannot be generalized, you need to understand customer value and impact, and enterprises need to represent each customer's voice across multiple business units. Utilize CSAT (customer satisfaction), and CX (customer experience) signals to provide real-time feedback to the product launch team.

Improve first call resolution and agent customer satisfaction:
Empower agents to tailor solutions based on customer engagement, predicted behavior, and personality to avoid escalation, thus reducing the average handling time and improving the FCR (first call resolution).

Increase e-commerce conversion:
Rank item page quality using returns, clickstreams, purchases, and customer service data to reduce returns and increase conversions. Customer Cosmos helps brands design websites, apps, and placements tailored to individual customer personas.

Optimize product recommendations on web/app:
To drive digital engagement, recommendations can be tailored based on product affinity. Personalized product recommendations introduce customers to new styles and assortments they wouldn't have otherwise discovered.

Enhanced category assortment:
By leveraging category and customer preferences, businesses can understand gaps and opportunities in the assortment. By identifying patterns in price sensitivity or upcoming trends, merchandising teams can plan assortments accordingly.

Reduced marketing spends by holistic campaign health measurement:
Identify the campaign's true impact and ROI with an integrated suite of shopper behavior, engagement, customer lifecycle, audience target, and lifetime value measures. Get customer-specific insights and optimize future spending with a holistic measurement system powered by Cosmos.

Success stories

Customer-centricity at scale for a global omnichannel retailer with +200B in annual revenue

Leveraging the Customer Cosmos, Tredence integrated more than 70+ real-time data pipelines processing 250 terabytes of data each week. This data created a full omnichannel view of the customer. However, the average retailer only secures less than 20% of their customers' wallet share. To bring in the critical rest of the market view, we integrated third-party credit card data, syndicated data, and other sources to shed light on the rest of the market behavior.

With the complete view of the customer, we then applied our Customer Cosmos models to better understand each shopper's attitudes, behaviors, and preferences. These models include more basic insights such as churn, propensity, and CLTV, as well as advanced customer DNA, including price sensitivity, channel affinity, product preferences, customer headroom, and more. Using these insights, the retailer could then identify and target highly personalized offers at the individual level instead of the segment level.

Next, our AI orchestration engine sent the right offers to the right shoppers at the right time using the right channel to maximize both short-term lift and long-term CLTV increases.

And finally, our measurement modules measured the full holistic impact of each promotion on shopper behavior to quantify ROI and identify real-time optimization opportunities. So, what were the results?

6x increase in supplier data monetization	**10 pt.** improvement in NPS	**5x** improvement in query processing time
+25M at-risk households reengaged	**$230** increase in customer life time value	

It's time to activate a adopt a true personalization strategy with Customer Cosmos. **Talk to Tredence!**

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About Tredence

Tredence is a data science and AI engineering company focused on solving the last mile problem in analytics. The 'last mile' is defined as the gap between insight creation and value realization. Tredence is more than 1,600 employees strong, with offices in Palo Alto, Chicago, Toronto and Bangalore, with the largest companies in CPG, retail, hi-tech, telecom, travel and industrials as clients.

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Beyond Possible