POINT OF VIEW

CUSTOMER INTELLIGENCE AT SCALE

Leverage unprecedented insights to power precise retail decision making

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

Retail data and artificial intelligence (AI) initiatives are supposed to improve customer-centricity. Yet many retailers struggle to deliver relevant, contextual, and personalized customer experiences. High customer expectations, conflicting business priorities, data mismanagement across the enterprise, and on-the-ground execution challenges often impede progress.

> *Retailers' challenges are not due to lack of customer data.*
> *They're due to lack of insights.*

5 CHALLENGES WITH RETAIL DATA ISSUES

Retailers face the following data challenges:

DATA IS TOO FRAGMENTED

First-party customer data is fragmented across sources, and third-party data is difficult to use because of privacy regulations. As a result, retailers use basic propensity models and other legacy approaches to understand and interact with customers.

CURRENT PROCESSES DON'T SCALE

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

SEGMENTATION MODELS ARE DATED

With inadequate data, retailers prioritize customer segments that are already engaged. Retailers need deeper customer insights to enable advanced personalization strategies.

DATA APPROACHES LEAVE MONEY ON THE TABLE

Most customer 360 and personalization solutions optimize for short-term outcomes like ROI and conversions, but fail to orchestrate personalized messages across all channels.

METRICS REINFORCE SHORT-TERM THINKING

Without a holistic measurement strategy retailers favor short-term metrics like visits and purchases, rather than long-term improvements such as customers evolving from inactive accounts to becoming loyal brand fans and high, sustained spenders.

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SUPERCHARGING CUSTOMER-CENTRIC STRATEGIES WITH AI-INFUSED INTELLIGENCE

Fortunately, there's a different way to address these challenges and create the new business value retailers seek. Retailers can deploy customer intelligence platforms that unlock the value of vast, untapped, and fragmented customer data, providing the insights necessary to develop customer-centric strategies. Leading platforms enable retailers to leverage first-party customer data, exploit the power of data partnerships, and use prebuilt machine learning (ML) models to accelerate their multi-year personalization journey. With all customer data in one place, multiple teams can create custom apps to personalize experiences.

SO, HOW WOULD SUCH A PLATFORM WORK?

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			Proprietary Tredence Data Partnership Ecosystem	
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

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 ENGINE
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.

Modern customer intelligence platforms aggregate customer data across all first-party omnichannel sources and then enrich it with third-party data. Using data, solutions can enable hundreds of attributes to create a comprehensive feature store.

Advanced data science models enhance enterprises' customer intelligence and deepen their understanding of how customers behave. Marketers can tap these deeper insights to test and deploy new strategies to increase customer responses to cross-selling and upselling offers, motivate repeat visits, and increase overall spending.

After all, why spend years developing customer intelligence, when a partner can set up a customer 360-degree view and new intelligence within a few weeks?

LEADING CUSTOMER INTELLIGENCE PLATFORMS PROVIDE MULTIPLE LEVERS FOR IMPROVING SHOPPER TARGETING

Using data-driven personalization enables retailers to drive custom-centricity and improve business outcomes. However, customer intelligence must continuously evolve to match pace with changing consumer behavior and buying patterns. Retailers can accomplish this goal by pairing data models with 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

With a customer intelligence platform, retailers can build and create comprehensive metrics from holistic data sources. Additionally, they can gather, observe, and forecast consumer attributes in one location.

CUSTOMIZABLE
RETAIL USE CASES

Here are some sample use cases, which can easily be customized to retailer business requirements.

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 INNOVATION & NEXT GEN
Headroom potential, price & time sensitivity, share of wallet, brand loyalty, attribute ranking, brand shift propensity, likelihood to respond to marketing

CUSTOMER EVENTS
Graduation, prom, birthday, marriage, pet ownership, new home ownership, new parents, etc.

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.

By winnowing in on key prescriptive and predictive attributes, retailers can finetune innovative marketing and personalization strategies, targeting the right audience with the right offer.

These attributes include:

PREDICTIVE METRIC	INPUT DATA	ALGORITHM USED	OUTPUT DATA
Propensity: Uses the transactional data to identify the next purchase date for a customer.	Transactional attributes (cust_id, date, units, unit price etc.)	**Logical Regression**	Cust_ID, 'Category', 'Propensity to Purchase'
NDP Uses the transactional data to identify the next purchase date for a customer.	Transactional attributes (cust_id, date, units, unit price etc.)	**Random Forest Classifier**	Cust_ID, 'Next Purchase Date' bucket (in days)
Churn Rate Uses the transactional data to predict if a customer is likely to churn.	100+ features across Sales, Clickstream, Email and Coupon data.	**Decision Tree**	Cust_ID, 'Churn_Flag (1/0)
Headroom Potential Uses the transactional data to predict the potential $ value a customer can spend.	Transactional attributes (cust_id and Departments purchased)	**Matrix Factorization**	Cust_ID, 'Headroom Potential (in %)
CLTV Uses the transactional data to predict the potential $ value a customer will spend in future.	Transactional attributes (cust_id, date, txn_amount, txn_type etc.)	**Linear Regression and Gradient Boosting**	Cust_ID, CLTV
Preference Score Uses the transactional and web data to predict preference scores across Departments, Payment Type, Color, Size, Channel.	1500+ features across Sales and Clickstream data.	**Light GBM**	Cust_ID, Preferential Score (in %)
Price Sensitivity Uses the transactional data, Price, unit economics.	Transactional attributes (cust_id, sku, price, co-purchased sku's etc..)	**Binary Classifier**	Price sensitivity (ratio) at individual Cust_ID and SKU level (Matrix of CUST X SKU size)

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Leading customer Intelligence platforms offer the following 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.

NEXT PURCHASE DATE:

Estimates a tentative purchase date, such as an upcoming week or month. Retailers can better plan and offer incentives if the predicted date deviates from the current date.

CLTV:

Helps determine customer future spend. It can be calculated based on engagement and spend. Customer lifetime value (CLTV) features are developed using first- and third-party data sources, such as loyalty, app interactions, digital adoption, and demographics.

HEADROOM POTENTIAL:

Predicts the available spending potential using third-party credit card purchases and first-party purchases. For example, recent college graduates moving to a new city to take a first job have high headroom but a low CLTV.

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.

PRICE SENSITIVITY:

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

PREFERENCE SCORE:

Helps teams understand customer preferences by leveraging transactions, purchases, and digital activity to develop deeper insights. Key preferences such as style, color, food, channel, and payment can be used to customize messaging and product assortments.

It's easy to see how these attributes can be combined in multiple ways to enable advanced segmentation and personalization strategies. Campaign data feeds back into the model, continuously improving results.

IMPROVE RESULTS WITH FINE-TUNED CUSTOMER INTELLIGENCE

With deeper insights and the tools to do test-and-learn marketing, retailers can accomplish critical goals.

These goals include:

IDENTIFYING AND REACHING UNTAPPED SEGMENTS

Identify untapped market segments based on proprietary headroom, customer lifetime value, and share of wallet. Retail marketing teams can also segment customers objectively for cross-sell and upsell opportunities.

DRIVING CUSTOMER RETENTION THROUGH PERSONALIZED MARKETING

Identify and map the right audience to products, categories, and brands based on predicted customer behavior. In addition, teams can increase customer engagement and retention by customizing marketing content to different segments.

IMPROVING MEDIA MONETIZATION STRATEGIES

Connect one-on-one with customers and measure the impact of personalization in real-time. By identifying trial and retention segments, retail marketing teams can build relationships with customers in an omnichannel environment, meeting them at the right time and place

INFLUENCING CUSTOMER BEHAVIOR THROUGH NEXT BEST ACTIONS

The next best action varies across customer segments. Modern customer intelligence platforms help teams develop the next best action strategies to influence customers throughout their lifecycle. For example, marketing teams can influence customers' behavior by optimizing and sequencing omnichannel touchpoints based on headroom opportunity potential or CLTV.

## EVOLVING THE OMNICHANNEL CUSTOMER EXPERIENCE

Perform journey analytics and identify friction points. Customers' value systems differ, and drivers of experiences cannot be generalized. As a result, retail teams need to understand customer value and impact and represent each customer's voice across multiple business units. Use customer satisfaction and customer experience signals to provide real-time feedback to the product launch team.

IMPROVING FIRST-CALL RESOLUTION AND AGENT AND CUSTOMER SATISFACTION

Empower agents to tailor solutions based on customer engagement, predicted behavior, and personality to avoid escalation. These actions reduce average handling time and improve first-call resolution.

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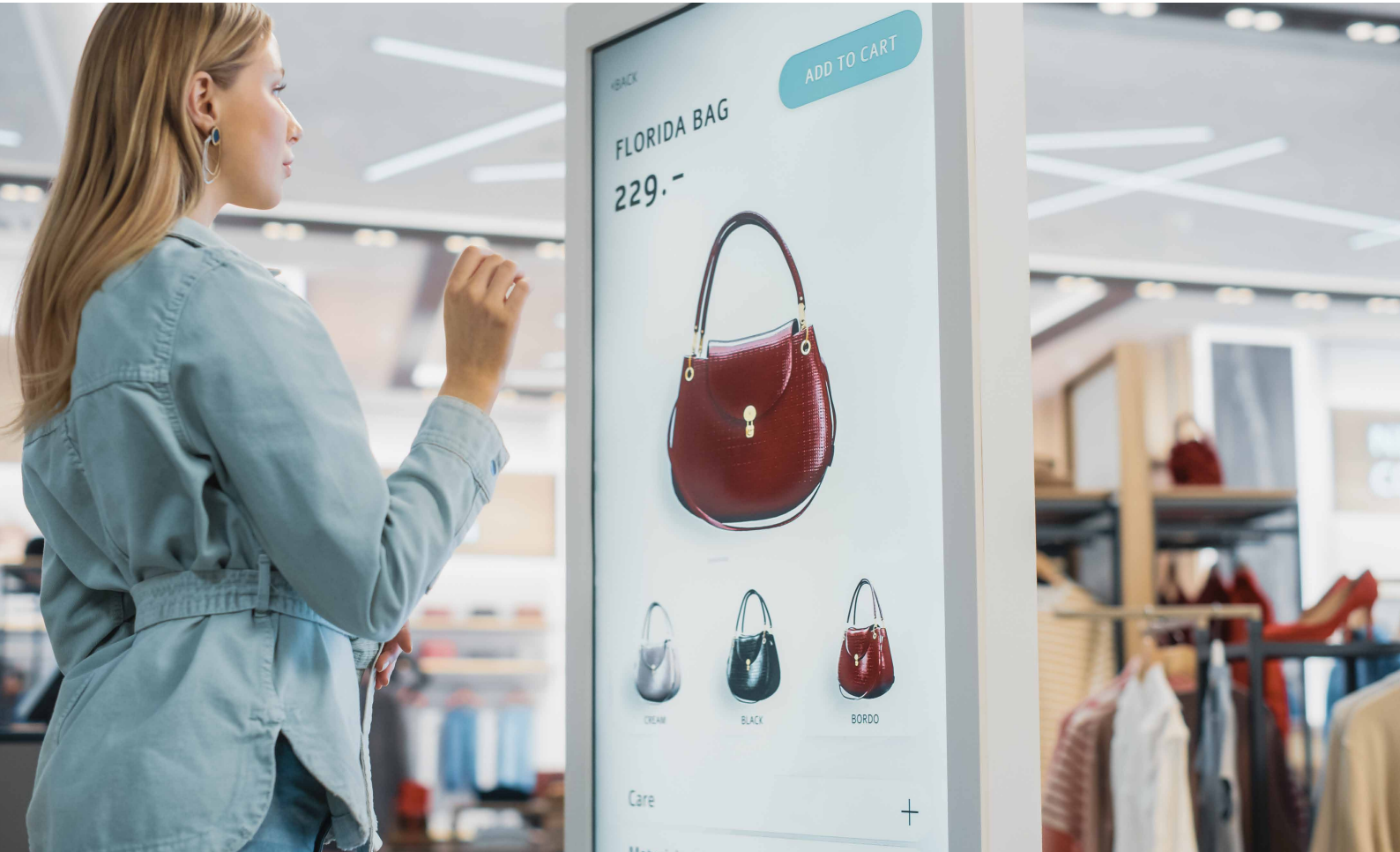
INCREASING ECOMMERCE CONVERSION

Rank item page quality using returns, clickstreams, purchases, and customer service data to reduce returns and increase conversions. Advanced customer intelligence platforms help brands design websites, apps, and placements tailored to individual customer personas.

ENHANCING CATEGORY ASSORTMENT

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

OPTIMIZING PRODUCT RECOMMENDATIONS ON ECOMMERCE SITES AND APPS

To drive digital engagement, digital channels can tailor customer recommendations based on their product affinity. Personalized product recommendations introduce customers to new styles and assortments they wouldn't have otherwise discovered.

REDUCING MARKETING SPENDING BY HOLISTIC CAMPAIGN HEALTH MEASUREMENT

Identify the campaign's true impact and ROI using an integrated suite of shopper behavior, engagement, customer lifecycle, audience target, and CLTV measures. Gain customer-specific insights and optimize future spending with a holistic measurement system powered by the customer intelligence platform.

HOW A $200B+ RETAILER ENABLES CUSTOMER-CENTRICITY AT SCALE

A global omnichannel retailer partnered with Tredence to improve customer insights by deploying its customer intelligence platform, Customer Cosmos.

Tredence began by integrating 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 typically secures less than 20% of their customers' wallet share. As a result, Tredence integrated third-party credit card data, syndicated data, and other sources to shed light on how customers spent elsewhere.

Next, Tredence leveraged Customer Cosmos models to improve the retailer's understanding of shopper attitudes, behaviors, and preferences. These models include both basic insights such as churn, propensity, and CLTV, as well as advanced customer DNA markers, including price sensitivity, channel affinity, product preferences, customer headroom, and more. Using these insights, the retailer could then identify and develop highly personalized offers at an individual, rather than segment level.

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

Finally, Customer Cosmos assessed the holistic impact of each promotion on shopper behavior to quantify ROI and identify real-time optimization opportunities.

6x
6x increase in supplier data monetization

10 pt.
10 points improvement in the retailer's net promoter score (NPS)

5x
5x improvement in query processing time

+25M
Reengaging +25M at-risk households

$230
Increasing customer lifetime value by $230

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OUTPACE COMPETITORS BY MONETIZING DEEPER INSIGHTS

Retailers are always looking for a competitive edge. Improving customer intelligence can give retailers deep insights they can leverage throughout their business: driving product innovation and engagement strategies.

With Tredence's expertise and Customer Cosmos, retailers can enable new use cases and gain insights in just a few short weeks. Customer Cosmos:

▌ **Provides more than 200+ customer data attributes** and integrates with leading apps

▌ **Maintains data quality** with enhanced standards, metrics controls, and reporting

▌ **Improves customer intelligence** as new attributes are added

▌ **Provides secure, self-service capabilities**, integrating customer attributes with other marketing platforms or business intelligence tools

▌ **Has an integrated MLOps suite** to streamline model monitoring and maintenance

▌ **Is a white-labeled, customizable solution** deployed directly in customer environments

By deploying Customer Cosmos, retailers can gain new insights and use this information to evolve the customer experience, delighting shoppers and increasing per-visit spending and lifetime value. Over time, customer-centric retailers pull away from competitors, dominating their category and creating unstoppable business momentum.

Learn more about Customer Cosmos.

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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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