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The Mathematics of AI in CPG & Retail.

10 FORMULAS FOR SUCCESS



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October 2026

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AI is changing Marketing Mathematics; re-writing the code for success.

Winning the end game relies on solving 10 crucial and tangible challenges

01 AI in Retail and CPG

02 10 Math Formulas of AI

03 Solving for Success



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AI is fundamentally re-wiring the path to purchase



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Imagine a world where...

AI influences 75% of purchases
from inspiration to checkout.

Experts believe that world is in 2030;

Where the consumer is no longer
your primary audience. The AI agent is.



Source: Bain & Company, 2025

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Today, the consumer does all the work

The path to purchase is a manual process that requires consumers to search, compare, decide, and execute on their own

Now: Human-led Journey

The Consumer Need
Trigger the search for products

Browse websites, apps, social, stores

Compares options manually; Receive recommendations

Consumer chooses based on limited information

Purchases manually at till in-store or online

Consumer reviews and learns over time



In the future, the path to purchase will be rewritten

From Intent to purchase will be re-distributed between humans and AI agents

Human

AI Agent

Future: An AI-Guided Journey

The Consumer Need
Trigger the search for products



Sets intent (needs, budget, preferences)

AI agent scans entire market

AI evaluates options in real time

AI optimizes and selects best option

Further guide the recommendations

Validates and approves

AI purchases autonomously

AI learns and improves decisions continuously

AI loyalty and repurchase

The Impact

$3-5T

in retail revenue globally by 2030



Source: McKinsey

And things are moving forward rapidly into 2027: Core Trends

1



AI capability will **accelerate**

Smarter | Faster | Cheaper

2



AI agents will move from isolated pilots to **embedded workflow**

Supply Chain | Finance
Marketing & Sales Processes

3



Trust, control, and **measurable business impact** will separate winners from hype

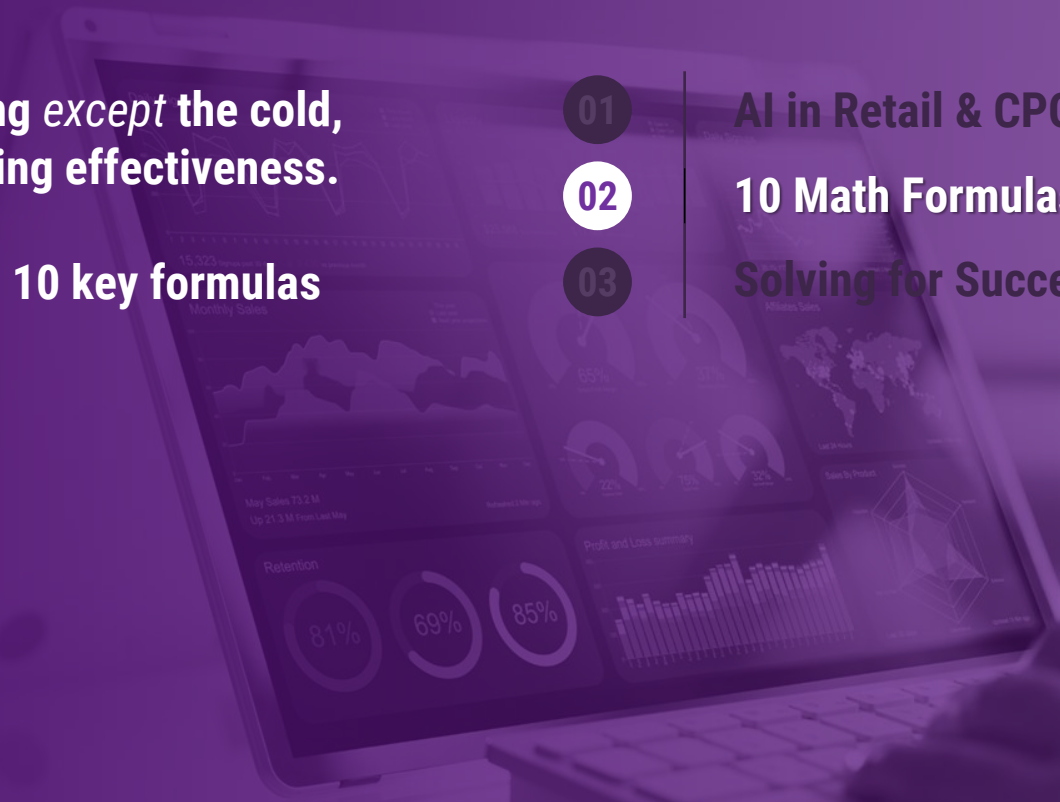
Are you ready for this 2030+ paradigm?
A future where AI and consumers will shape (and drive) demand



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AI changes everything *except* the cold, hard math of marketing effectiveness.

Circana presents the 10 key formulas that turn AI into ROI.



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Turning AI into ROI: Solve these 10 tangible Marketing Math equations

Being Shoppable < Being Desirable

Transaction < Emotional Connection

In-Store Experience > Frictionless

Shopping Habit < Maxxing Agent Reco

Value > Optimal Price

Challenger Brands = Established Brands

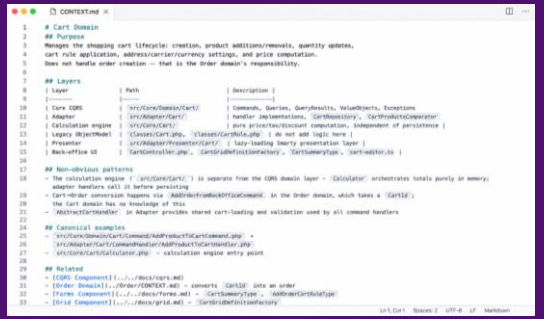
Trust = Penetration

Choice < Conversion

Repurchase ≠ Loyalty

Personalization > Fragmentation

Being Shoppable < Being Desirable



<



Being Visible & Included in recommendations is the baseline in eCommerce and AI retail ecosystems

Be found on the AI Shelf

Consistently listed with standardized content
Same product data across retailers
Make sure items are tagged correctly

Being Desirable & Trusted is higher in the Algorithmic scale

Win the AI Shelf

Drive reviews and endorsements that reinforce key claims
Strengthen proof points AI can cite that builds trust in claims
Integrate & Optimize for Social Commerce

Shopping the AI shelf with emotional trust and desirability signals can influence conversion rates



Brand-building remains critical. Emotional differentiation becomes a way to influence how AI interprets and ranks products.

Transaction < Emotional Connection

‘Moments of Truth’ derived from deep human insight can be used
to sharpen AI ranking and purchase, over commoditized choice attributes



Frame brand emotion and sentiment into machine-readable data
Create Hero SKUs with high availability, trusted ratings and endorsed claims
Ensure multi-sensory brand and product mnemonics are tagged across Retailers

Embed emotional equities in structured data

Future ‘Brand Marketing’ must translate emotional equity into measurable and searchable signals that AI systems can recognise and reference.

In-store Brand Experience > Frictionless Commerce

Physical stores become more important for Experience

Make shopping fun again! Experiential, Enjoyable, Adding Assortment,
Endorsement and Engagement vs Clinical Convenience







Merchandising
& Store Navigation
signposting
Consumer Benefit,
Occasion Or Need







Fulfilment Innovation
such as Vending &
Quick Delivery
for added convenience

Digital Signage to
elevate sense of value,
Mood, story-telling
or create ambience





Bring an authentic brand experience alive



Merchandising excellence to make the brand Easy to Select, Clear & Informative Labels, Transparent Prices & Range

National Brands		Private Labels
62%	Always Available to Buy	71%
39%	Available at Better Prices	71%
57%	Transparent on Price	71%
60%	Easy to Select	65%
63%	Makes Shopping Enjoyable	66%
67%	Range of Options	62%
70%	In Variety of Sizes	61%
73%	Clear List of Ingredients	70%
67%	Delivers what it Promises	62%
67%	Recommended/Endorsed	52%
68%	Has Clear Labels	66%
64%	On Deals & Promotions	60%

Source: 'Crisis At Every Step', n=3000
14 markets: USA, BRA, UK, IT, FR, DE, NL, ESP, AUS, NZ, TUR, UAE, IND, CHN

Crucial for low-involvement, regular-purchase and price-competitive categories at risk of programmatic buying

Brands should invest in experiential merchandising, retail media, immersive technologies, and high-engagement shopping moments to defend against commoditisation.

In-store Brand Experience > Frictionless Commerce

For high involvement categories; From AI discovery to in-store shopping

Agentic AI is reshaping consumer discovery, but there are creative ways retailers can implement new technologies to help complement and complete the shopper journey in store.



Target

AI-Driven Inventory Management

Target uses AI to automate inventory tracking, reducing human error and ensuring shelves are stocked with the right products at the right time. This improves product availability and customer satisfaction.



Sephora

Virtual Try-On with AR Mirrors

Sephora integrates AI-powered augmented reality (AR) mirrors that allow customers to virtually try on makeup. This creates a personalized and engaging in-store experience while reducing the need for physical samples.



Amazon

Alexa for Shopping
Whole Foods Integration

Amazon's AI assistant acts as a conversational shopping agent turning intent (e.g., "build a grocery list") into a cart which will then funnel shoppers toward Amazon checkout or Whole Foods pickup/delivery.



IKEA

Ikea Place
Furniture Placement

Shoppers can use their phone camera to view true-to-scale 3D furniture in their actual room helping them visualize fit, layout, and style before testing comfort in person or purchasing on the spot.

Source: Retailer websites

Brands should invest in experiential merchandising, retail media, immersive technologies, and high-engagement shopping moments to defend against commoditisation.

Breaking Shopping Habit < Maxxing Agent Recommendation

The Mach 3 Conundrum



How do you trade them up?
*Where **routine replenishment** with no comparisons, cognitive effort drives purchase*

The Legacy Effect



How do you break default brand choice?
*Where **memory, familiarity & satisfaction history** buys loyalty*

The Mental Availability Shortcut



How do you win against 'always-on' leaders?
*Where **quick cognitive rules,** not evaluation, wins purchase*

Control the attributes that AI agents scan, evaluate, rank and select on

Be Visible and Discoverable with consistent and complete content

Win on the structured attributes that AI agents compare

Drive reviews, certifications, expert endorsements that reinforce key claims

Turn replenishment, default brand choice and heuristic habits into choice-based shopping missions

Brands can no longer rely on historical loyalty alone; they must continuously earn recommendation status within AI decision frameworks.

Value > Optimal Price

Address AI's comparison bias to avoid being under-rated
for delivering brand equity & value beyond a target price point
Make Value > Price





Brands must codify equity & value:

Hard code sources of good value beyond absolute price
Optimize Price-Pack-Architecture
Create 'Obvious Winner' SKUs: Hero items with strong value & availability

Retailers must drive Profit per Purchase:

Are we dynamically optimizing price, assortment, and
substitution to maximize profit per decision?
Embed margin into ranking logic
Optimize for basket value | Guide trade-up paths

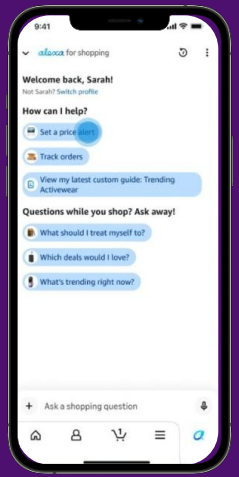
Guide AI-tuned algorithms *and shoppers* to sources of good value that offset AI's comparison bias

Product architecture, hero SKUs, premium positioning, and value communication become essential to offset AI's comparison bias.

New Challenger Brands = Established Brands

As Retailers deploy AI, control over brand discovery and purchase decision-making shifts away from brands toward algorithms.

Amazon Alexa for Shopping



Carrefour Hopla+



Established Brands cannot rely on Salience as algorithms drive Brand Visibility

Retail Media shapes AI recommendations

Fewer recommendations limit Visibility

Personalization fragments Visibility across consumers

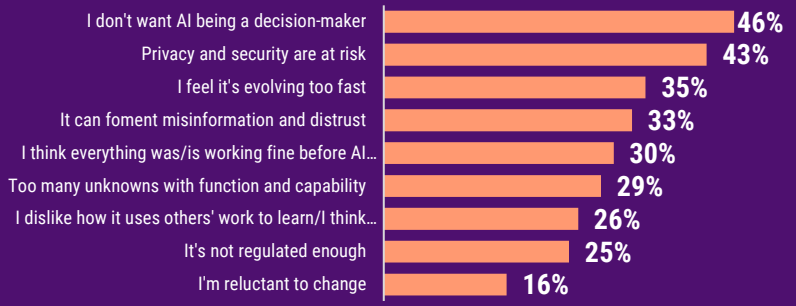
AI-tuned 'visible' and 'digital shelf optimised' Challenger Brands can compete effectively with Established Brands

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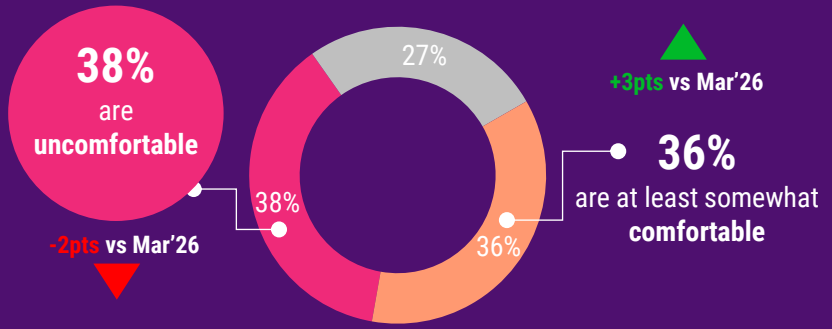
Trust = Penetration

Trust concerns around Privacy, Security, Fears of losing control & rapid pace of change are slowing adoption for some consumers

What sort of barriers or concerns are preventing you from trying or using AI?



How comfortable would you feel allowing an AI assistant to automatically find, compare, and purchase products for you based on your preferences?

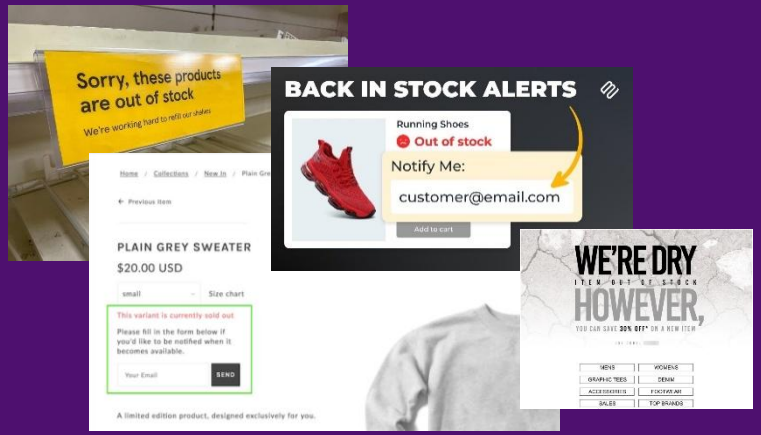


Bigger brands & Retailers may have a native benefit as trust & usage of AI increases

Source: Circana, Omnibus Survey, May 2026
Q: How familiar are you with AI agents that can shop or make purchases on your behalf? Base: 1,027; Q: How comfortable would you feel allowing an AI assistant to automatically find, compare, and purchase products for you based on your preferences? Base: 1,027;
Answered on a 1-5 rating scale; 1-2 not familiar/uncomfortable, 3 neutral, 4-5 at least somewhat familiar/comfortable

Choice < Conversion

Beyond offering personalised and curated choice,
Conversion relies heavily on Availability and Optimal Assortment





AI deprioritizes products with inconsistent availability

Win Digital Shelf Distribution: Being Listed and In-Stock first step to being chosen

Simplify Assortment: AI favours clear 'Best Choice' options

Too many similar SKUs on the digital shelf creates confusion

Portfolio rationalisation, hero SKU strategies, digital shelf availability, and supply chain discipline become growth drivers.

Repurchase ≠ Loyalty

As Repurchase becomes algorithmic,
Loyalty is fundamentally redefined.

From emotional to algorithmic loyalty

Agents optimize for value, not brand attachment.

Simplicity & structure win

Easy-to-calculate, machine-readable programs get prioritized.

Always-on optimization

Rewards are applied in real time, driving higher redemption.

Transparency increases competition

Agents instantly compare programs across retailers.



Repurchase ≠ Loyalty

As Repurchase becomes algorithmic,
Loyalty is fundamentally redefined.

Losing brand visibility will mean losing loyalty:
Show Up or be Shut Out

Invest in Retail Media
over traditional loyalty & brand ambassador programs?

Tagging Sources of Volume is key:
Agentic or Human?

Identifying what the AI agent values:
Is it Availability, Price, Convenience, Shipping, Returns Policy, Endorsements, Reviews?
Likely not Emotional Cues!

Premium & Scarcity Brands
must re-define loyalty

Analogue vs Algorithmic Loyalty
is a distraction: they will need both to overcome bias in an AI world

Your loyal consumer doesn't have a **heartbeat.** It has an **api.**



Brands must learn what AI values—availability, convenience, ratings, delivery speed, endorsements, and pricing—while continuing to maintain emotional brand affinity with consumers.

Personalization > Fragmentation



20000 SKUs Supermarket
200 SKUs Online Storefront
20 SKUs Personalised Offers
2 SKUs AI Agent Ranking

Move up algorithmic curation

Create ‘Best Choice’ SKUs with high ratings & broad availability
Simplify Assortment avoiding too many similar SKUs
Optimize for Category Entry Points e.g. “Budget Option”

Digital Portfolio optimization to de-prioritize long tail brands & SKUs will improve rankings

Turning AI into ROI: Solve these 10 tangible Marketing Math equations

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Challenger Brands = Established Brands

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Winning the AI end game crucially relies on **the brand solving these tangible challenges.**

Here is how some Brands & Retailers will win



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Competitive battleground shifting from winning consumer attention to winning algorithmic selection: Evolve marketing capabilities & priorities

- **Marketing must evolve into 'Agent Engine Optimisation':** 6 capabilities define success in new purchase decision journey
  Visibility & Inclusion | Sentiment & Framing | Recommendation Power | Conversion Influence | Accuracy & Trust | Data & Integration
- **'Product Information Management Systems (PIM) as important as traditional media investment:** Present consistent product content, structured data, APIs, taxonomies, and integration across retailer ecosystems
- **Retail Media becomes more valuable:** From advertising inventory to algorithmic influence & conversion for Brands; powerful monetization opportunity for Retailers
- **Portfolio Optimisation must change:** Optimise for smaller number of 'obvious winner' SKUs rather than endless assortment proliferation
- **AI Readiness is core to your Growth Strategy:** Don't merely deploy AI tools, Align marketing levers & assets into a machine-readable ecosystem
  Brand equity | Pricing | Availability | Retail media | Customer data | Loyalty programmes | Product content | Retail partnerships

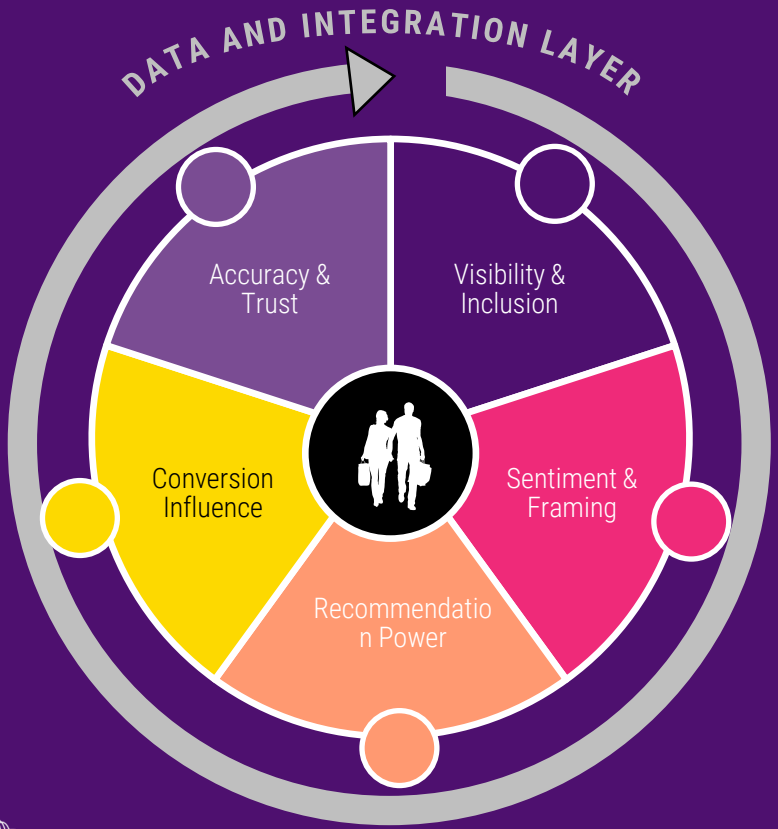
'The Readiness Gap' will define who wins Category Leadership & Growth in an AI-guided Retail/CPG world

Marketing effectiveness for Brands in an AI retail ecosystem rests on expanding the marketing toolbox to address these key questions



Remember: AI Agents don't browse; they evaluate, rank, and select

Brand success in AI-guided ecosystems is controlling how your products are shown, compared and chosen across Retailers and data ecosystems



Visibility & Inclusion:
Are we listed and properly tagged across retailers?

Sentiment & Framing:
Do reviews and content reinforce your positioning?

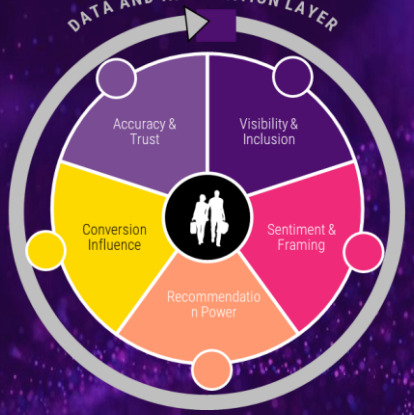
Recommendation Power:
Do we win on price, ratings, and attributes?

Conversion Influence:
Are we easy for retailers/agents to sell (in stock, simple)?

Accuracy & Trust:
Is our data consistent everywhere?

Data & Integration
Are we measuring and optimizing across retailers?

☑ Actions checklist for Brands to win in AI-guided commerce



Visibility & Inclusion

1. **Win distribution/digital shelf completeness:** Be listed across key retailers AND ensure every SKU has complete content. Standardize product data across ALL retailers: Same name, specs, pack size, benefits everywhere.
2. **Optimize for category entry points:** Make sure your items are tagged correctly (e.g., "budget option")

Sentiment & Framing

3. **Drive reviews that reinforce key claims (not just star ratings):** Shape how your brand is described across retailer content, reviews, and third-party sources

Recommendation Power

4. **Win on structured attributes agents compare:** Price per unit, ratings, availability, claims **Create "obvious winner" SKUs:** Hero items with strong value, high ratings, and broad availability
5. **Strengthen proof point:** Certifications, awards, and expert endorsements that agents can cite

Conversion Influence

7. **Ensure in-stock reliability:** Agents deprioritize products with inconsistent availability
8. **Simplify assortment:** Too many similar SKUs creates confusion, agents favor clear "best choice" options

Accuracy & Trust

9. **Continuously validate retailer content:** Fix outdated claims, incorrect sizing, or missing info
10. **Be conservative with claims:** Avoid risky or unverified claims that could reduce trust signals
11. **Create a single master product file (PIM):** One source feeding all retailers and partners

Data Integration

12. **Integrate retailer + syndicated data:** Combine POS, digital shelf, ratings, and availability data
13. **Partner with retailers on data sharing:** Collaborate on search, recommendations, and media performance

Up next in Circana's AI, Measured Series

AI, Measured: Where Consumers Draw the Line on AI

November 4

2 p.m. ET/ 1 p.m. CT

AI, Measured: Meet the AI Consumer

December 8

2 p.m. ET/ 1 p.m. CT

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Circana is a leading advisor on the complexity of consumer behavior. Through superior technology, advanced analytics, cross-industry data, and deep expertise, we provide clarity that helps almost 7,000 of the world's leading brands and retailers take action and unlock business growth. We understand more about the complete consumer, the complete store, and the complete wallet so our clients can go beyond the data to apply insights, ignite innovation, meet consumer demand, and outpace the competition.

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