

ENGAGEMENT, PERSONALIZATION AND MEASUREMENT HOW AI IS REDEFINING CUSTOMER LOYALTY IN RETAIL

For contemporary retail, operating in a context of structural fragility, this is a must. Loyalty can no longer be classified as a natural outcome of the funnel, or simply the result of this or that promotional or technological lever. Loyalty instead is turning into a trust-based platform, with artificial intelligence providing the cognitive infrastructure that enables companies to orchestrate personalization, customer engagement, and omnichannel capabilities in a consistent, relevant, and adaptive manner. This opens up new opportunities for accurately measuring loyalty in a highly volatile environment thanks to conceptually and technologically advanced models and tools.

LOYALTY//TRUST//RETAIL//AI//DIGITAL MARKETING



EMANUELE ACCONCIAMESSA

is currently an Academic Fellow at Bocconi University and an Executive Fellow at SDA Bocconi School of Management; he was previously an Adjunct Professor at the University of Milan. He also serves as Chief Operating Officer of Focus Management. Since 2018, he has coordinated research for the Diversity Brand Index.

The retail sector is undergoing a historic phase characterized by structural fragility that can no longer be attributed solely to temporary shocks or easy-to-interpret economic cycles. Unlike past crises, which companies could tackle with short-term strategies or limited corrective measures, the persistent instability we are seeing today is profoundly mutating market mechanisms and consumer behavior.

As highlighted by recent analyses from the International Monetary Fund and the European Central Bank, in 2024–2025 various exogenous factors converged: geopolitical tensions, energy instability, a slowdown in global growth, and supply chain restructuring, to name a few. As a consequence, the decision-making environment has become inherently uncertain and difficult to predict.

In the face of extreme uncertainty in demand, grocery retail (in particular large-scale retail) is taking on an increasingly systemic role, acting as a veritable economic buffer, especially in terms of mitigating inflationary spikes. Retailers find themselves simultaneously juggling growing pressures on operating costs, tensions along the supply chain, and rising consumer expectations, all against a backdrop of cautious, fragmented, and selective demand.

Data from Italy's National Statistics Institute show that consumer confidence in this country remains consistently below the psychological threshold of 100, signaling a climate of widespread vulnerability that directly impacts spending decisions, prompting consumers to pay closer attention to value and affordability and to assuage perceived risk (Istat, 2025).

This precarious state of affairs not only leads to shrinking consumption volumes and modified spending patterns; it also impacts the relational dynamics between retailers and consumers.

In this scenario, trust becomes a critical factor in stabilizing purchasing behavior.

In fact, as far as ensuring continuity and loyalty over time, the limitations of traditional retail competitive levers (price, promotion, and product assortment), when used "conservatively," are increasingly evident.

All this means we need to rethink the dynamics of the relationship between retailers and consumers. Specifically, we can no longer interpret loyalty as stable or automatic behavior, nor simply as the result of aggressive promotional policies or repetitive incentive mechanisms.

Rather, loyalty is a dynamic construct, as fragile as the context it stems from and heavily dependent on the retailer's ability to offer value, consistency, and reliability over time. Put another way, loyalty is evolving from a tactical lever to a structural element of competitiveness, as it contributes to stabilizing the customer-business relationship when demand volatility is high.

FROM TRANSACTIONAL RETAIL TO THE TRUST-BASED ECOSYSTEM

Traditionally, the primary focus of grocery retailers was operational efficiency. Competitiveness in this sector historically hinged on the ability to optimize product assortments, manage promotional strategies, maximize inventory turnover, and cut costs across the entire value chain.

In this model, the product offering was relatively stable, the competitive landscape sufficiently predictable, and consumers were guided by established habits and largely unwavering loyalty, according to conventional wisdom. Loyalty, consequently, was not an explicit strategic objective, but rather an implicit, natural outcome of the funnel.

NielsenIQ data (2024; 2025) on grocery retail regarding packaged consumer goods showed growth in value of 1.9% in 2024 (current network). This trend was driven both by new store openings and renewed inflationary pressure.

The latter, which began rising again in August 2024, appreciably affected consumers' purchasing decisions, spurring them to reorganize their spending behaviors. This in turn reinforced the polarization of product assortments which was already underway, working to the advantage of private labels both in the entry-level and premium segments. The growing popularity of private labels also reflects a shift in consumer trust from individual brands to the retailer's brand, which becomes the primary guarantor of perceived value thanks to consistent choices regarding product assortment, pricing, positioning, purpose, and values. At the same time, promotions generated 26.8% of sales in 2024 and 26.6% in the first half of 2025 across hypermarkets, supermarkets, and self-service channels.

To understand this transformation, we need to look at a similar structural change affecting the demand side. Indeed, data from a recent McKinsey study paint a picture of today's European and Italian consumers who are profoundly different from in the past. In fact, 45% of European consumers are concerned about rising prices, and only 15% of the market is willing to pay "exorbitant" prices,

compared to 30% who firmly state they do not want to increase their spending budget. What's more, over 77% of the Italian population plans to give up non-essential products and services, 75% say they'll choose more affordable products and services (even ones that they don't typically purchase), and 64% intend to postpone certain planned expenses. At the same time, habitual choices carry far less weight than before, and consumers have a greater propensity to switch brands and to make continuous comparisons between brands (BCG, 2025).

These behaviors should not be interpreted as signs of irrational instability, but rather as expressions of an active process of consumption rationalization. A more informed, more aware, and more selective consumer is emerging—but one who is also more disillusioned with brand promises. In this context, loyalty is not automatic anymore; companies must earn it over and over again by proving their worth.

Digital transformation further amplifies this phenomenon. The systematic use of comparison tools, retail apps, digital wallets, and loyalty programs makes the decision-making process more informed, but also more reversible.

Today's consumers can compare alternatives in real time, quickly change their minds, and re-direct their spending to different retailers without incurring major costs.

This drastically diminishes the weight of exit barriers and makes the relationship with the retailer inherently more tenuous. It is in this space that digital tools (in particular artificial intelligence) become structural levers: not so much to automate marketing, but to continuously observe, interpret, and coordinate a relationship that, by its very nature, has become dynamic, unstable, and deeply data-driven. Digital is now an enabler of loyalty that has radically different connotations with respect to the past. Companies can use technologies to nurture relationships built over time by tracking more data and generating more targeted prompts, capabilities which are superseding tactics based on episodic incentives or established habits.

DIGITAL MARKETING TRENDS IN THE AI ERA

In the managerial debate on retail, artificial intelligence is often described as an enabling technology that can make processes more efficient and marketing actions more effective. But delving deeper into the empirical evidence and international case studies, it becomes apparent that AI represents something more: a cognitive infrastructure that redefines the ways in which retailers observe, interpret, and manage their relationship with the consumer.

In today's retail landscape, marked by economic fragility, demand volatility, and growing disillusionment with brand promises, digital technology—AI in particular—is now one of the main tools that retailers are using as they attempt to rebuild continuity, relevance, and trust. The consumer relationship today is not governed solely by visible levers (price, promotion, product assortment), but rather by a continuous sequence of micro-interactions, suggestions, notifications, internal search engines, customer care initiatives, personalized content, and omnichannel journeys, all of which require consistency and timeliness. Thanks to AI, companies can orchestrate this complexity, transforming fragmented data (on purchases, browsing, context, inventory, preferences, weak signals) into meaningful decisions and actions: messages, services, and offers that are relevant, understandable, and useful to customers in real time, when they are actually making their choices. In an era where loyalty is no longer automatic, this interpretive capability is now the foundation for minimizing customer uncertainty. For this reason, digital technology does not replace traditional levers, but instead makes them manageable in a systematic way.

The phenomenal growth of AI, which by 2030 will contribute 3.5% to global GDP (\$19.9 trillion), is not merely a sign of technological dissemination, but a transformation in how the consumer relationship is designed and managed at a structural level (IDC, 2024). In this scenario, trends in digital technologies and digital marketing cannot be viewed as isolated

innovations, but as manifestations of a systemic shift, in which loyalty progresses from a program into a relational infrastructure.

AI and predictive personalization

Personalization is one of the first areas where AI demonstrated its transformative potential. While for years this tactic relied on static segmentation, deterministic rules, and one-to-many campaigns, today's machine learning models make it possible to shift toward predictive personalization, which can dynamically adapt to the behaviors, preferences, and background of each individual consumer. According to a recent McKinsey study (2025), companies that adopt advanced AI-driven personalization strategies see a 15–20% upsurge in customer satisfaction, revenue growth of 5–8%, and a 20–30% drop in the cost-to-serve.

The most noteworthy aspect, however, is not economic performance, but the transformation of the customer relationship. Specifically, today a message is not sent to a customer; instead it emerges as a contextual response to an implicit need. While traditional personalization amplified the relevance of the message, predictive personalization reinforces the cognitive proximity between brand and consumer, lessening the decision-making burden and enhancing the perception of individual recognition.

The Starbucks case is emblematic of this evolution. Through its proprietary Deep Brew platform, based on advanced machine learning models, the company integrates transactional, behavioral, and contextual data (consumption times, location, weather conditions, and historical preferences) to suggest personalized products, offers, and content via the app. Thanks to this approach, rewards program members visit the coffee shop more frequently and are far more likely to redeem personalized offers compared to standard promotions.

But the power of this approach is not the tactical outcome, but the ability to incorporate personalization into the consumer's daily routine. In this model, AI is not an interruption of the consumer experience, but instead an accompaniment. Loyalty

is built not by explicit incentives, but through a sense of continuous utility, which gives the relationship stability even when there are no compelling promotional stimuli. In this way, personalization becomes a mechanism for behavioral stabilization, which is particularly beneficial in the face of economic uncertainty.

Conversational AI and the automation of customer engagement

A second major trend involves the growing adoption of conversational AI solutions in managing interactions throughout the customer journey. Advanced chatbots, virtual assistants, and intelligent customer care systems can adapt in real time to customer needs, so these new tools are gradually replacing standardized interactions with context-aware conversations. According to Salesforce data (2025), 75% of decision-makers in the retail sector believe that by 2026, AI agents will be essential to compete in the market.

Global retailers, in fact, are already using these technologies to enhance the customer experience and minimize friction at digital touchpoints. In a landscape marked by information overload and increasingly complex offerings, the ability to guide the decision-making process has become a crucial competitive factor. Here, conversational AI introduces a profound change: Navigation gives way to conversation, and the interface acts as a cognitive mediator between the customer and the product offering. This has direct implications for loyalty, as it alleviates decision fatigue and bolsters the consumer's sense of control.

A notable example in this regard is Walmart, which has developed an AI assistant embedded in its app to help customers search for products, compare alternatives, plan their shopping, and manage recurring purchases. As reported by the Wall Street Journal (2025), the company is also experimenting with incorporating advertising formats into conversations with the assistant, paving the way for AI-driven retail media. This model is particularly interesting because it demonstrates how conversational AI can serve a dual purpose: on one

hand, enriching the customer experience; on the other, transforming the relationship into a valuable monetization channel. In this case, loyalty is not reinforced by direct incentives, but by the quality of the interaction and the perception of continuous support.

AI and adaptive omnichannel

While for years the topic of omnichannel retailing has been framed in terms of proliferating channels, today's most advanced examples demonstrate that true value lies in their adaptive integration, which is made possible by intelligent data orchestration systems. Unequivocal research findings demonstrate that omnichannel customers show higher levels of spending and retention compared to single-channel customers, provided that the experience is consistent, seamless, and contextual (Sopadjieva et al., 2017). To this end, AI can synchronize messages, offers, and content across digital channels and physical stores, updating the experience in real time based on observed behaviors.

Nike represents one of the most advanced examples of AI-driven intermingling of digital and physical channels. Through the Nike Training Club and Nike Run Club apps, the brand uses membership as an orchestration platform, collecting behavioral data that feeds advanced CRM. This enables the company to personalize offers, content, and recommendations across all touchpoints for members, resulting in dramatically higher engagement rates, purchase frequency, and conversion rates compared to non-members. In this model, loyalty is not a separate program, but a platform that connects e-commerce, apps, communities, and physical retail into a single coherent, adaptive experience, nurturing the sense of belonging and mitigating the risk of disengagement.

SDA Bocconi's Loyalty Promotion Monitor analyzes the trends in digital technologies and specifically digital marketing, finding that today, artificial intelligence does not function merely as a multiplier of efficiency, but as an infrastructure for managing customer relationships. Predictive personalization, conversational AI, and adaptive

omnichannel strategies all share the ability to address the information asymmetry between retailers and consumers, translating fragmented data into coherent, useful, situation-specific experiences. Loyalty, therefore, can no longer be interpreted as the outcome of individual initiatives (a program, a promotion, or an incentive), but as the systemic result of a continuously orchestrated interaction. AI makes this relationship more relevant, fluid, and predictable, not because it automates marketing, but because it allows companies to simultaneously manage complexity, volatility, and the escalating expectations of the contemporary consumer. All this being said, however, the centrality of AI raises a crucial question: If loyalty is the product of an extensive cognitive infrastructure, to measure this construct, we must go beyond ex post indicators and purely behavioral metrics. In other words, managing loyalty in the age of artificial intelligence implies having the ability to take the customer relationship—which is now dynamic, adaptive, and deeply data-driven—and make it visible, measurable, and manageable.

MEASURING LOYALTY IN THE AGE OF AI

As digital marketing and loyalty strategies evolve, we need to rethink the models we use to measure loyalty. To this end, we must understand loyalty as a dynamic phenomenon that incorporates observable and latent dimensions. As the Loyalty Promotion Monitor reveals, one of the main challenges of loyalty programs lies in linking digital engagement initiatives to medium- and long-term business outcomes. Metrics such as Customer Lifetime Value, Purchase Frequency, or Redemption Rate are still fundamental, but they are not enough to capture the complexity of contemporary loyalty. As corroborated in the literature, an exclusively behavioral interpretation is a limited one that must be supplemented with attitudinal and perceptual dimensions (Ben-Akiva et al., 2002).

In the current retail landscape, by relying exclusively on historical KPIs the risk is

overestimating the stability of the relationship, and failing to detect early signs of disengagement. AI allows us to overcome this limitation by introducing a predictive measurement logic capable of discerning behavioral patterns and detecting weak signals that foreshadow churn.

In this context, one of the most salient areas of application involves pre-churn analytics models, which help retailers zero in on customers at risk of churn by analyzing a set of factors: interaction frequency, changes in spending patterns, and digital signals. As an example, Amazon uses advanced machine learning models to accurately anticipate disengagement dynamics and to secure membership value, contributing to the high retention rates of Amazon Prime. In this model, measurement is no longer an *ex post* control tool but a lever for preventive intervention, designed to preserve the value of the relationship over time.

A second area concerns Customer Lifetime Value, which is shifting toward dynamic models that are updated in real time thanks to AI.

The Salesforce Observatory (2024; 2025) underscores how retailers adopting similar approaches can optimize the allocation of marketing investments, focusing resources on customers with the highest potential. Specifically, the Sephora case study demonstrates how, by combining purchase data, digital interactions, and qualitative feedback, the retailer can estimate customers' potential value and differentiate engagement strategies. These efforts help improve the overall performance of Sephora's Beauty Insider program (Sawhney and Goodman, 2025).

Finally, Hybrid Choice Models represent one of the most advanced frontiers in loyalty measurement, integrating observable data with latent variables related to perceptions, attitudes, and values (Abou-Zeid and Ben-Akiva, 2024). AI now makes these models more scalable, to the point where they can even be applied in complex retail realities. At Tesco, for example, by combining loyalty data, surveys, and advanced analytics, the grocery retailer gains an understanding not only of purchasing behaviors but also of the underlying motivations, input which

supports more effective decisions regarding product assortment and pricing (Yawson and Yamoah, 2022). This approach is set to progress further, as demonstrated by the recent partnership with Mistral AI to develop advanced solutions supporting the Clubcard program.

Taken together, these findings show that advanced loyalty measurement tactics do not represent an analytical exercise *per se*, but rather a prerequisite for transforming loyalty into a lever for strategic governance. Specifically, artificial intelligence creates the conditions for a more direct link between engagement, trust, and economic performance, making loyalty a system that is progressively more measurable, interpretable, and governable.

CONCLUSIONS AND MANAGERIAL IMPLICATIONS

The Loyalty Promotion Monitor's desk analysis underscores the fact that loyalty in contemporary retail can no longer be interpreted as an automatic outcome of purchasing behavior, nor as the result of individual technological or promotional initiatives. In a retail landscape marked by structural fragility, economic uncertainty, and growing volatility in consumer behavior, loyalty emerges as the product of integrated management across multiple dimensions—digital, technological, organizational, and behavioral.

In this environment, artificial intelligence represents a valuable tool, but not when it's used on its own. The cases discussed in this article demonstrate, in fact, that AI generates value only when it's embedded in a broader strategic framework capable of coordinating personalization, omnichannel capabilities, customer engagement, and advanced measurement systems.

So the real challenge for management is not to adopt individual tools, but to manage complexity by incorporating myriad trends into a coherent system for managing the relationship with the consumer. This involves transforming a multitude of technological, behavioral, and market-related signals into a decision-making framework that can

minimize perceived uncertainty and further stabilize the relationship over time. From this perspective, loyalty evolves from a program into an infrastructure

of trust, becoming a strategic lever of resilience for retail—not by promising loyalty, but by making it possible even in highly volatile contexts.



REFERENCES

- Abou-Zeid, M., Ben-Akiva, M. (2024). "Hybrid choice models." In: *Handbook of Choice Modelling* (2nd ed.), Edward Elgar Publishing.
- Boston Consulting Group (BCG) (2024). *Loyalty Programs Are Growing – So Are Customer Expectations*.
- Banca Centrale Europea (BCE) (2025). *Bollettino economico*, n. 4/2025.
- Boston Consulting Group (BCG) (2025). *European Consumer Sentiment Study*.
- Ben-Akiva, M., McFadden, D., Train, K., et al. (2002). "Hybrid Choice Models: Progress and Challenges." *Marketing Letters*, 13, 163–175.
- Fondo Monetario Internazionale (FMI) (2025). *World Economic Outlook*.
- IDC (2024). *The Global Impact of Artificial Intelligence on the Economy and Jobs*.
- Istat (2024;2025). *Fiducia dei consumatori e delle imprese*.
- McKinsey & Company (2025). *European Consumer Pulse Survey – Italia*.
- McKinsey & Company (2025). *State of the Consumer 2025: When Disruption Becomes Permanent*.
- McKinsey & Company (2025). *Next Best Experience: How AI Can Power Every Customer Interaction*.
- NielsenIQ (2024;2025). *Top4Top, dicembre 2024 e giugno 2025*.
- Salesforce (2024; 2025), *Connected Shoppers Report*.
- Sawhney, M., Goodman, G. (2025). *Sephora: Transforming the Beauty Experience through Technology*. Harvard Business School Publishing.
- Sopadjieva, E., Dholakia, U.M., Benjamin, B. (2017). "A Study of 46,000 Shoppers Shows That Omnichannel Retailing Works." *Harvard Business Review*.
- Vranica, S. (2025). "Walmart Is Exploring Bringing Ads to Sparky, Its New AI Shopping Agent." *The Wall Street Journal*, 25 November 2025.
- Yawson, D.E., Yamoah, F.A. (2022). "The Tesco Clubcard Loyalty Programme: The Gold Standard." In *Contemporary Retail Marketing in Emerging Economies*. Palgrave Macmillan, Cham.