

Your CLV Model Is Blind to Marketing: How Transformers Identify the Right Customers

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WHAT'S THE ISSUE?

Most customer lifetime value (CLV) models classify customers using purchase recency, frequency, and spend, while ignoring the marketing touchpoints that shape those purchases. That forces leaders to treat CLV as a fixed trait, not an outcome of a journey, and it leaves budget decisions anchored to a value metric that assumes emails, promos, and media don't matter.

WHY IT MATTERS FOR MARKETERS

If CLV doesn't "see" marketing, it can't guide marketing. Teams end up optimizing short-term conversion while guessing at long-term customer equity impacts, especially around promotions, retargeting, and channel mix. This research shows that transformer models can ingest the full sequence of touchpoints, improve long-horizon CLV accuracy, and surface interpretable journey patterns that help decide who to promote, who to target, and where to invest.

WHAT THE EXPERTS SHARED

Dr. Grant West (in4mation insights) and Zipei Lu (University of Maryland Robert H. Smith School of Business), argue that traditional purchase-only CLV models treat customer value as a fixed trait rather than an outcome shaped by marketing. By focusing only on recency, frequency, and spend, firms ignore the other factors that influence long-term value.

They apply transformer models (an AI approach built to learn from sequences) to customer journeys.

Instead of assuming how long a marketing touchpoint "should" matter, the model looks at the entire history of interactions and figures out which actions, and in what order, predict long-term value. It learns from the real journey rather than relying on preset rules.

In a direct-to-consumer health and wellness case, this approach materially improved accuracy: 12-month CLV prediction error dropped by 22%, and the alignment between predicted and actual value improved by 51% compared to a traditional purchase-only model. The model also highlighted clear patterns in how high-value and low-value customers move through channels and over time.

This had direct implications for promotions. At a high level, promo-acquired customers appeared more valuable. But once customers were segmented, the story changed: promotions increased value for most customers, yet slightly reduced value among the very best customers, who likely would have purchased at full price. By reading early journey signals, the model helped the company decide who should receive a promotion and who should not be discounted unnecessarily.

REALITY CHECK

Transformers can significantly improve prediction accuracy, but only if the underlying journey data is complete and well connected. That means reliably linking customer activity across channels and capturing both click-based and view-through exposures where possible. The model's attention scores help explain which touchpoints appear most influential, but they do not prove cause and effect. Use these signals to guide targeting decisions and generate hypotheses, then confirm what truly drives incremental impact.

WHAT YOU CAN DO

- **Expand CLV to include journey data.** Incorporate marketing and engagement touchpoints, not just transactions, so value reflects the full customer experience.
- **Move beyond fixed decay assumptions.** Replace preset rules about how long a touchpoint “should” matter. Instead, use models that capture how timing, order, and combinations of interactions truly influence outcomes.
- **Use attention for action.** Translate attention patterns into targeting, channel mix, and creative tests that improve efficiency.
- **Strengthen first-party data.** Invest in cleaner, integrated journey data so sequence-based CLV models can operate reliably.
- **Differentiate promotion strategy.** Use early journey signals to identify high-potential customers and avoid discounting those likely to buy at full price.

KEY TAKEAWAYS

- Purchase-only CLV models ignore marketing and therefore can't reliably guide marketing spend.
- Transformers improve long-horizon CLV by modeling the full sequence of touchpoints, not summary statistics.
- Attention weights make sequence models more practical by showing which parts of the customer journey are most strongly linked to long-term value, helping teams see which patterns matter.
- Promotions can increase CLV for most customers while eroding value for the highest-potential customers.
- The practical win is differentiated action: who to promote, who to suppress, and where to invest based on early journey signals.