Original Research Article

Analysis of CRM system customer profiling optimization methods in real estate marketing

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Abstract: As the real estate industry undergoes a period of significant adjustment, customer relationship management (CRM) systems have increasingly become essential tools for enhancing marketing operations. Within these systems, customer profiling serves as a core module for delivering personalized services and targeted campaigns, with its construction quality directly influencing conversion efficiency. However, current CRM systems in the real estate sector often suffer from fragmented customer data, rudimentary labeling systems, underdeveloped predictive models, and a lack of iterative updating mechanisms—all of which limit the ability to deeply mine customer value. This study addresses these technical challenges by proposing four targeted optimization strategies: building a unified customer data platform, establishing a dynamic multi-dimensional tagging system, introducing behavioral analysis and predictive modeling, and constructing a marketing feedback loop. By systematically identifying key obstacles and proposing structural and data-driven solutions, this paper aims to offer actionable insights for enhancing fine-grained customer management during the digital transformation of real estate enterprises.

Keywords: real estate marketing; CRM system optimization; regional market differentiation; customer lifecycle management (CLM); social media marketing

1. Overview of CRM systems and customer profiling in real estate

1.1. Core functions of CRM systems in real estate marketing

As real estate enterprises shift from rapid turnover strategies to refined operational models, CRM systems have evolved into central platforms for managing customer relationships. These systems perform multiple roles, including integrating customer data, tracking sales progress, and supporting strategic marketing decisions. Their fundamental value lies in the digital management of the full customer lifecycle—From lead generation and initial contact to intent evaluation, contract follow-up, and post-sale service. By consolidating data and coordinating business processes, CRM systems bridge information silos across marketing, sales, and customer service, enabling standardized customer journey modeling that supports strategic planning. More importantly, in marketing scenarios, CRM systems leverage dynamic customer data to mark behavior changes at different stages in real time, thereby enhancing engagement effectiveness and conversion rates. In complex project environments with diverse lead sources, CRM systems have increasingly become a core competitive asset rather than mere data entry tools[1].

1.2. Structure and business value of customer profiles

Customer profiling refers to the systematic modeling of customer data within a CRM system, aiming to provide a detailed representation of target groups by integrating customer attributes, behavioral records, and potential preferences. These profiles typically consist of three dimensions: first, fundamental attributes such as age, gender, occupation, income level, and family structure, which form the static foundation of the profile; second, behavioral characteristics including browsing history, online inquiries, site visits, and property viewing frequency, which reflect dynamic interest and decision-making processes; third, psychological tendencies and preferences, such as floor plan preferences, price sensitivity, and brand perception, which help estimate potential purchase intent and conversion likelihood. In practice, accurate customer profiling supports strategic

segmentation and tagging, as well as content recommendation, channel optimization, and campaign timing, significantly improving outreach efficiency. With the waning of traditional traffic dividends, robust customer profiling has become a vital competency for real estate firms seeking marketing differentiation and improved customer engagement outcomes.

2. Analysis of key issues in real estate CRM customer profiling

2.1. Data fragmentation and disjointed customer information

In many real estate enterprises, CRM systems are not the sole repositories of customer data. Instead, they operate in parallel with sales platforms, customer service systems, channel management tools, and other infrastructure. These systems often lack standardized interface protocols and a unified customer master index, resulting in multiple, inconsistent records for the same individual across different systems. This leads to data duplication, contradictions, and discontinuities. Particularly during lead conversion, over 90% of customer journey information is not integrated across systems, causing gaps between initial contact and post-sale service. Even when some systems support data synchronization, actual implementation is often hindered by structural constraints or access limitations, leaving customer information synchronization rates below 60%. This highly fragmented data environment increases the complexity of constructing effective customer profiles and weakens the integrity and accuracy of data mining models, ultimately disrupting marketing flows and compromising predictive precision[2].

2.2. Crude tagging systems and lack of update mechanisms

The core value of customer profiling lies in the depth and dynamism of its tagging system. However, most current CRM tagging frameworks suffer from overly simplistic structures, static lifecycles, and poor granularity. Structurally, tags are largely confined to basic attributes such as age, gender, and region, with limited coverage of behavioral, emotional, or journey-based variables. This limits the system's ability to infer customer intent or track evolving behavioral patterns. From a management perspective, update frequencies are generally low—many tags remain unchanged long after their creation, rendering them misaligned with customers' current states. Industry observations suggest that over half of the tags in CRM systems are updated less frequently than once every 30 days, creating serious lags relative to real-time behavioral shifts. Redundancy is another concern: duplicated definitions, inconsistent naming, and tag match rates below 10% are common, all of which degrade profiling accuracy. These layered deficiencies significantly restrict the utility of customer profiles in segmentation, personalization, and modeling, weakening the CRM system's ability to support front-end decision-making.

2.3. Shallow behavior mining and lack of predictive models

Although some real estate firms have introduced behavioral tracking modules into their CRM systems, these capabilities remain limited to passive recording and retrospective analysis. Most systems merely track visit frequency, inquiry counts, or physical site visits, while neglecting deeper modeling based on time-series data, event paths, or engagement weighting. Despite the accumulation of behavioral data, few organizations have built robust models for identifying user intent or forecasting conversion probabilities, leaving customer profiles static and underutilized. From a data science perspective, without clustering, regression, or sequence-based models, profiles only describe known states and cannot guide future actions. This limitation is especially critical in the long, high-stakes decision cycles typical of real estate transactions. The inability to forecast behavior reduces strategic foresight, leads to misallocation of resources, and ultimately undermines both customer satisfaction and transaction outcomes[3].

3. Optimization strategies for CRM-based customer profiling in real estate marketing

3.1. Building a unified customer data platform

To address the fragmented data and siloed systems prevalent in real estate enterprises, a top priority is to establish a unified Customer Data Platform (CDP) atop the existing CRM infrastructure. This platform should

standardize data across various sources—Including sales, customer service, channel management, offline branches, and digital touchpoints—Using a unified customer ID to merge cross-system identities. The data architecture should follow a four-layer structure comprising basic customer information, behavioral data, tag systems, and event logs, ensuring both field standardization and model scalability. Integration tools such as ETL processes and API connectors should be employed, with a recommended data update frequency of no more than six hours, and real-time synchronization (on a minute-level basis) for critical events such as visits or signings. To maintain data quality, the platform should uphold technical thresholds such as a field match accuracy above 95%, a data loss rate under 5%, and conflict resolution turnaround within 24 hours. Additionally, validation rules should be implemented to ensure cross-system consistency and integrity.

At the operational level, this platform enables real-time access to customer data and dynamic profile updates within the CRM system. By leveraging the CDP as a data hub, marketing teams can bridge the gap between marketing, sales, and operations, generating accurate customer journey maps based on a unified data source. These profiles support downstream functions such as tag management and behavioral modeling[4].

3.2. Establishing a dynamic, multi-dimensional tagging system

In the context of refined operational strategies, customer tagging systems must move beyond static classification and embrace extensibility, traceability, and real-time update capabilities. The first step is to optimize the dimensional structure and classification logic of the tags. A four-dimensional framework is recommended: basic attributes, behavioral events, preference tendencies, and marketing response. Basic tags may include gender, age, and family structure. Behavioral tags could cover visit frequency, property viewings, and online interactions. Preference tags capture interests such as unit type, brand sensitivity, and time-of-day preferences. Marketing response tags reflect user interactions with various outreach methods such as SMS, push notifications, and calls. Each tag should include configurable parameters such as weighting factors, update intervals, and expiration periods to prevent stagnation. In practice, a 7-day update cycle is standard, while high-sensitivity segments may warrant updates every 48 hours. A backend rules engine should be implemented to automate tag adjustments in response to behavioral triggers.

3.3. Introducing predictive modeling based on behavioral analysis

In practical real estate marketing, traditional CRM systems often remain limited to static data integration and lack the ability to analyze behavioral trends. This shortcoming hampers proactive marketing and efficient conversion. To achieve true CRM system optimization, enterprises must integrate predictive models based on behavioral data, enabling customer profiles to evolve dynamically and support stage-based classification. The core of these models lies in uncovering the mathematical relationships between customer behaviors at different touchpoints—Such as page depth, session duration, and interaction frequency—And their likelihood of conversion. These models should be grounded in customer lifecycle management (CLM), categorizing individuals into four stages: potential, active, hesitant, and churned. By incorporating behavior frequency, journey path, and response events, time-series or classification models can be constructed. For instance, Long Short-Term Memory (LSTM) networks can be applied to detect shifts in browsing patterns, while logistic regression models can estimate conversion probability within a 7-day post-behavior window. It is recommended that model training leverage a dataset of no fewer than 5,000 behavioral records and maintain an AUC (Area Under Curve) score above 0.80 to ensure practical business value[5].

Given the pronounced regional market differentiation in real estate, customer preferences and decision-making processes vary significantly across cities. It is therefore critical to incorporate regional attributes, source channels, and social media interaction variables into the model design. Especially during feature engineering, input variables must follow structured definitions, clear categorization, and algorithm-appropriate encoding. As shown in Table 2, each feature requires a tailored preprocessing strategy and aligned modeling method to enhance generalizability and deployment feasibility. For example, customers in first-tier cities tend to rely more heavily on social platforms for real estate information, with social media-driven marketing achieving conversion rates exceeding 18%, whereas lower-tier cities exhibit stronger reliance on offline interactions. To accommodate this variability, region-specific weightings should be assigned in the model. Additionally, model outputs such as predicted conversion scores can be fed back into the CRM tag system to guide strategy segmentation—Pushing

exclusive offers to high-intent users and incentive-based nudges to hesitant ones. This completes a closed loop of "analysis–activation–feedback–adjustment," advancing CRM systems toward intelligent automation.

Table 2. Sample feature schema for predictive modeling of customer behavior.

Feature Category	Example Variables	Data Type	Processing Method	Recommended Algorithms
Behavior Frequency	Page views, visit count	Numeric	Normalization	LR, Random Forest
Behavior Path	Browsing sequence (e.g. Property → Unit)	Sequential	Encoding	LSTM, HMM
Response Behavior	Clicked marketing content	Boolean	Binarization	LR, SVM
Social Interaction	Likes, shares, comments	Numeric	Smoothing	XGBoost, RNN
Source Channel	WeChat Ads, short videos, website	Categorical	One-hot encoding	GBDT, Decision Trees
Regional Attribute	City tier, geographic features	Categorical	Nested tagging	All supervised learning models

3.4. Constructing a closed-loop marketing feedback system

Despite initial progress in data collection and customer profiling, many real estate enterprises still struggle to establish true feedback loops within their CRM systems. As a result, profiles become stagnant—C reated but not updated—Leading to "pseudo-personalization." To address this, a comprehensive closed-loop feedback mechanism must be embedded into the CRM framework, enabling seamless integration from marketing activation and customer response, through data return, profile update, and strategy optimization. Technically, firms should interconnect execution platforms (e.g., SMS systems, WeChat push, mini-apps) with the CRM system, maintaining a maximum data refresh cycle of two hours. Event tagging should be implemented to log user actions like ad clicks, content sharing, or participation in activities, with data simultaneously written into the "customer event tracking table." These behavioral updates should also trigger automated modifications to customer tags and lifecycle states. The feedback results must then be routed back to the model retraining pipeline and segmentation engine, allowing the CLM framework to dynamically adjust each customer's journey. This supports precise actions such as strengthening engagement with high-intent users, reactivating hesitant ones, and downscaling frequency for low-activity profiles.

Beyond improving the technical integrity of the loop, the marketing feedback system plays a strategic role in optimizing actual conversion flows and increasing campaign efficiency (**Figure 1**). Enterprises should align their evaluation systems with key metrics such as CTR (click-through rate), form completion rate, and interaction ratio, forming a four-level analysis structure: behavior → profile → strategy → outcome. For example, after implementing a feedback system, one leading property developer reduced its CTR monitoring granularity from daily to hourly and introduced A/B testing for content delivery. These changes resulted in a 2.1× increase in lead conversions for its primary projects. By adopting the principle of "every touchpoint updates the system," CRM profiles can evolve through automated learning and adjustment, reducing dependence on manual updates and periodic reports. This approach enables greater agility in responding to user preference shifts—especially in differentiated regional markets—And facilitates real-time personalization of social media campaigns. Ultimately, it ushers in a feedback-powered, data-driven evolution of marketing intelligence.

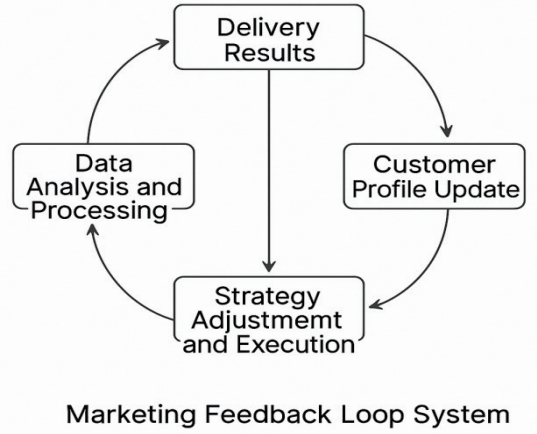

Figure 1. Marketing feedback loop system.

4. Conclusion

The precise construction of customer profiles has become a critical pillar for CRM system optimization and refined marketing management in the real estate sector. Based on a systematic analysis of common issues in current profiling practices, this paper proposes a four-dimensional optimization strategy encompassing data integration, tagging architecture, behavioral prediction, and feedback loop construction. These approaches enable real estate enterprises to achieve dynamic customer lifecycle management (CLM) and strategy alignment. In the context of accelerating digital transformation and increasing regional market differentiation, only by continuously developing an intelligent closed-loop system—Driven by data updates, profile refinement, and strategic linkage—can firms enhance marketing efficiency, boost conversion quality, and build a truly customer-centric real estate marketing ecosystem.

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