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Specifics of studying the target audience for effective allocation of advertising budgets in companies providing services

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Abstract

This work makes an attempt at a systematic comprehension of modern methodological approaches to target audience research that underlie optimal advertising budget allocation. The aim of the research is to develop and substantiate a unified methodological toolkit for precise identification and segmentation of service consumers, ensuring a significant increase in the efficiency of marketing investments. As the theoretical and methodological platform, principles of systems analysis, methods of statistical processing of big data and cohort analysis, as well as an integrative review of specialized publications, were used. As a result of the analysis of existing practices, strengths and weaknesses of common approaches to segmentation and targeting were identified. Based on the obtained conclusions, a multi-level model of target audience research is proposed. Implementation of the proposed model allows for enhancing the accuracy of identifying relevant segments and rationalizing budget distribution among communication channels, which ultimately leads to an increase in the overall effectiveness of advertising campaigns. The scientific novelty of the research lies in the synthesis of behavioral, psychographic and predictive methods for dynamic audience segmentation in the service sector, which expands the existing theoretical toolkit and opens new opportunities for practical application in marketing. The results obtained will be of interest both to researchers specializing in marketing communications and consumer behavior and to executives and practitioners in the sphere of service provision.

Keywords: Target Audience; Advertising Budget; Service Sector; Segmentation; Marketing Strategy; Predictive Analytics; Customer Journey Mapping; Advertising Effectiveness; Consumer Behavior; Digital Marketing.

1. Introduction

In the context of the modern digital economy, where the information space is replete with messages and consumer attention is fragmented, the effectiveness of marketing communications is determined by the precision of target segment identification and the depth of their psychographic and behavioral research analysis. This is especially relevant for service organizations in which the quality of client interaction serves as a key component of the value proposition. Suboptimal allocation of advertising budgets due to superficial study of the consumer audience results not only in direct financial losses but also in dilution of brand positioning, reduction of customer loyalty and, consequently, loss of competitive advantages [3, 4]. According to recent studies, the volume of the Russian advertising market grew by 30 % in 2023 and, by expert estimates, reached an additional 20 % growth by the end of 2024, indicating an intensification of the struggle for audience attention [5]. At the same time, the share of digital channels in total advertising expenditures exceeds 50 %, underscoring the need to master modern analytics tools and automate marketing processes [6].

The rationale for the chosen topic is based on the growing imbalance between the exponential increase in available consumer behavior data volumes and companies' capabilities to interpret them effectively within the strategic context of advertising planning. Traditional segmentation, which relies primarily on socio-demographic indicators, proves

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incapable of providing adequate forecasting of consumer preferences and responses in the rapidly changing service market environment. The scientific literature reveals a scarcity of studies devoted to the development of comprehensive, integrated target audience models that combine deep psychographic methods with the potential of predictive analytics and machine learning algorithms adapted to the specific characteristics of services.

The aim of this research is to substantiate a multifaceted model for studying target audiences in service companies, aimed at enhancing the efficiency and accuracy of advertising budget allocation.

The scientific novelty lies in the introduction of an integrative approach to consumer base segmentation that unifies behavioral pattern analysis, psychographic characteristics and predictive analytics results into a single system, thereby enabling the formation of adaptive, dynamically changing clusters rather than fixed groups.

The research hypothesis is based on the assumption that the application of a multilevel methodology for target audience analysis — including customer journey mapping (Customer Journey Mapping), psychographic profiling and predictive modeling using machine learning algorithms — ensures a significant increase in the accuracy of forecasting responses to advertising campaigns and, consequently, contributes to more rational marketing budget allocation and growth of ROMI.

2. Materials and Methods

In modern studies of target audience analysis for effective allocation of advertising budgets in service companies, four main directions can be distinguished. The first is related to the application of artificial intelligence and marketing analytics to support decision-making in small and medium enterprises. Thus Magableh I. K. et al. [1] investigate the role of marketing artificial intelligence in enhancing sustainable financial performance of medium enterprises through customer engagement and data-driven decision-making. The authors propose a model in which AI tools analyze user behavior in real time and generate recommendations for reallocating advertising budgets with consideration of long-term sustainability. Ijomah T. I. et al. [2] demonstrate how marketing analytics improves the quality of managerial decisions and financial indicators of small enterprises, emphasizing the importance of integrating BI systems into advertising campaign planning processes. A strategic approach to transforming decision-making through AI analytics is described by Selvarajan G. [9], offering industry scenarios for budget optimization based on machine learning models adapted to the specifics of service.

The second direction focuses on machine learning methods for in-depth analysis of consumer behavior and responses. Haque A. et al. [6] conduct a bibliometric analysis of publications for the period 2000–2023, systematizing the main branches of AI research in retail and highlighting key methods from customer clustering to recommendation systems. Salloum A. M., Almustafa M. M. [7] apply machine and deep learning methods to classify customer reviews in Arabic, demonstrating high accuracy in sentiment recognition and the possibility of automated adjustment of advertising messages. Navarro L. F. M. [8] investigates predictive analytics of consumer behavior using machine learning models, emphasizing that precise forecasting of responses to advertising messages can significantly enhance the return on investment in digital channels.

The third applied direction examines the development of customer-oriented service offerings as a factor in improving interaction quality and, consequently, more precise targeting. Sheth J. N., Jain V., Ambika A. [10] analyze the growing importance of service support, describing how multichannel customer centers and personalized loyalty programs increase satisfaction and stimulate repeat purchases – key indicators in advertising budget allocation.

The fourth direction comprises macro- and industry reports on digital advertising trends and statistics, shaping the external environment and general guidelines for strategic planning. The annual HubSpot review Marketing Statistics Every Team Needs to Grow in 2025 [3] presents data on the increase in mobile traffic share and expenditures on performance marketing. The Datareportal report Digital 2025: Global Advertising Trends [4] records a steady growth in global digital advertising spending and a change in the balance between social networks and search platforms. The IAB/PwC report for 2024 [5] confirms a shift of budgets toward programmatic purchases and video advertising – imposing requirements for more precise study of target segments.

Despite the significance of the approaches listed, contradictions exist in the literature. Some authors emphasize the advantage of AI analytics for budget optimization while others point to the challenges of integrating such systems in small companies with limited resources [1, 2, 9]. Moreover, methodological divergences in defining efficiency metrics (sustainability of financial indicators vs. level of user engagement) complicate the comparison of research results [1, 6]. At the same time, insufficient attention has been paid to ethical and legal aspects of processing customers' personal data

when using machine learning, as well as to the adaptation of models to the specifics of particular sub-sectors of the service industry (for example, b2b services versus b2c products). In addition, issues of cross-channel allocation of advertising budgets considering differences in returns from offline and online interaction points have not been sufficiently developed, which opens prospects for further research.

3. Results and discussion

As a result of extensive study of theoretical foundations and systematic analysis of empirical data a multistage model for researching the target audience of organizations in the service sector was constructed the main purpose of which is to increase the efficiency of advertising resource allocation. The developed structure (see Figure 1) is organized on an iterative principle and includes four interrelated components:

- Stage of collecting and consolidating heterogeneous data,
- Stage of multilevel audience segmentation,
- Stage of predictive modeling with subsequent optimization of marketing investments,
- Stage of continuous monitoring of indicators and adaptive strategy adjustment.

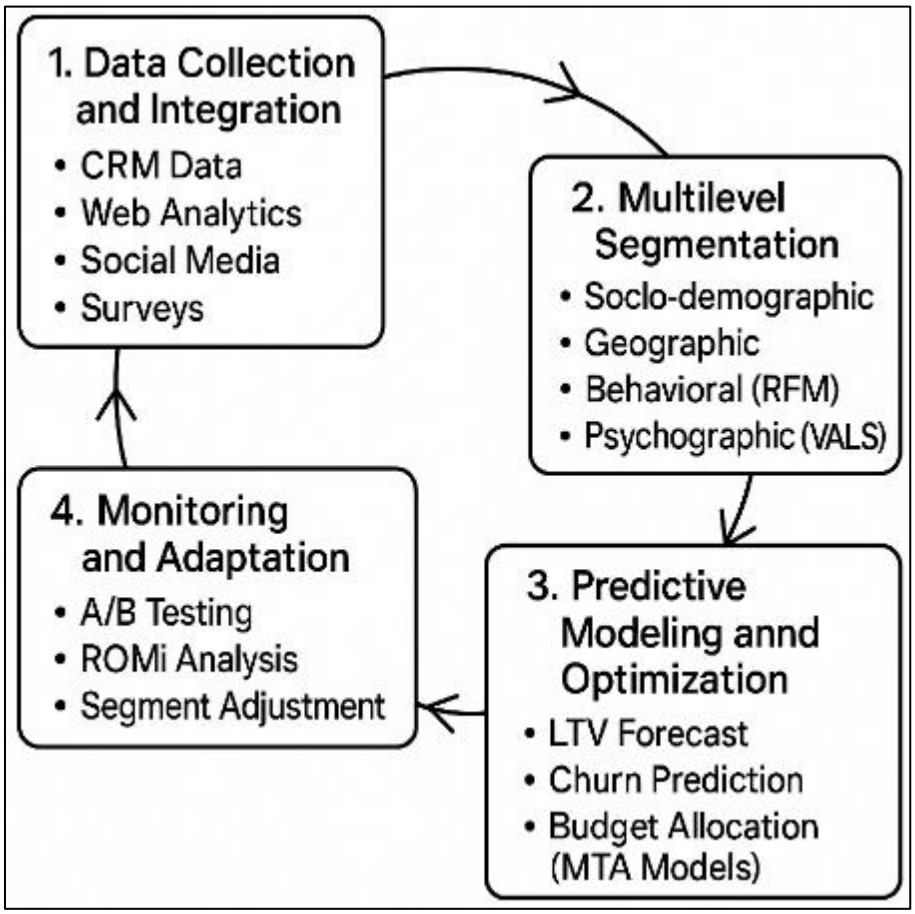

Figure 1 Integrated model of target audience analysis for advertising budget optimization (compiled by the author based on [1, 2])

At the first stage a unified information environment is formed on the basis of a customer data management platform (Customer Data Platform, CDP). Within this approach heterogeneous sources are collected and unified: corporate CRM systems (purchase trajectories, support inquiries), web analytics tools (session structure and duration, key interaction points), social media data and targeted survey results. Through end-to-end integration and cleansing of these datasets a complete 360° view of each user's behavior and preferences is achieved, creating a robust analytical foundation for subsequent stages [2].

The second stage involves multi-level segmentation of the customer base that goes beyond classical demographic and geographic criteria. The proposed methodology includes two advanced dimensions:

Behavioral segmentation is conducted using RFM analysis (Recency, Frequency, Monetary). This method allows identification of user groups based on the recency of the last purchase, frequency of transactions and monetary amount spent, which makes it possible to detect the most active and valuable clients, as well as those exhibiting signs of declining loyalty [8].

Psychographic segmentation is implemented on the basis of VALS (Values and Lifestyles) methodologies. Classification according to value orientations, beliefs, interests and lifestyle helps to understand the underlying motives behind product choice. For example, in the fitness services segment health oriented, status seeking and socially oriented clients can be distinguished, for each of which tailored creative messages and optimal communication channels are developed.

The third stage is key both from scientific and practical perspectives. It employs predictive analytics and machine learning methods to address two central tasks:

- Forecasting customer lifetime value (Customer Lifetime Value, LTV). Using regression models (for example linear regression and gradient boosting) the aggregate contribution of a customer to the company's revenue over the entire duration of interaction is estimated.
- Churn rate prediction (Churn Rate). Classification algorithms (logistic regression, random forest and gradient boosting) help identify users with a high probability of churn, allowing proactive retention program development [9].

The resulting forecasts become the basis for optimal allocation of the marketing budget: instead of uniform or intuitive resource expenditure, investments are directed towards the acquisition and retention of segments with the highest expected LTV. For evaluating the contribution of each channel to the final purchase decision a multi-touch attribution model (Multi-Touch Attribution, MTA) is applied which correctly distributes share of voice among all touchpoints in contrast to the simplified last click [10].

As shown by the data presented in table 1, the transition from the traditional budget allocation scheme to the predictive model allows a substantial increase in return on marketing investment (ROMI).

Table 1 Comparative analysis of the efficiency of advertising budget allocation (compiled by the author based on [5, 6, 8, 10])

Promotion channel	**Traditional allocation (%)**	**LTV-based allocation (%)**	**ROMI (Traditional)**	**ROMI (LTV-based)**
Contextual advertising	40%	25%	250%	350%
Targeted advertising (social networks)	30%	45%	300%	480%
Content marketing (blog, SEO)	20%	20%	400%	420%
Email marketing (retention)	10%	10%	600%	650%
Overall average ROMI	10%	10%	325%	455%

Data presented in Table 1 confirm that redirecting resources to those advertising channels where an audience with an elevated lifetime value (LTV) is concentrated — in this case targeted campaigns aimed at psychographic clusters with the highest engagement and propensity to acquire premium educational products — yields an increase of the total return on marketing investment (ROMI) coefficient by 40 %

The fourth stage — monitoring and adaptation — completes the analytical loop. Decisions made are continuously evaluated through multifactorial A/B testing of creative materials and communication messages for different segments, as well as through end-to-end analysis of ROMI dynamics for each channel and consumer group. The results obtained are fed back into the first stage of the process, enriching the CDP (Customer Data Platform) with up-to-date data on

audience behavior and preferences. This ensures constant recalibration of the mathematical model and initiates a new cycle of iterative optimization

Thus the traditional scheme of advertising budget planning is transformed into an adaptive self-learning system capable of responding in real time to shifts in consumer patterns. For a visual representation of this mechanism at the level of individual segments it is advisable to employ an extended customer journey map integrated with performance metrics of each channel (see Figure 2).

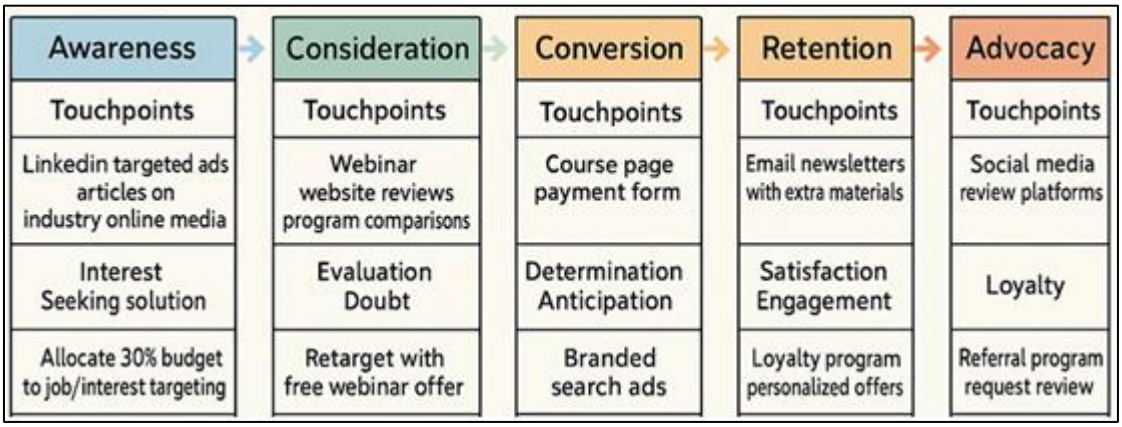

Figure 2 Integrated customer journey map for the "Young Professionals" segment (service - online courses for advanced training) (compiled by the author based on [3, 4, 7])

Analytical customer journey map visualizes the sequence of key interaction points for each target segment, allowing justification of the choice of tools and communication channels at each stage. The map demonstrates how marketing tactics should be varied — from mass-reach activities at the awareness stage to personalized offers at the decision point — and how to optimize allocation of resources and budget in accordance with projected return metrics.

The trend toward strengthening the role of personalized communications is confirmed by the results of international studies. This indicates that investments in in-depth audience research not only contribute to the reduction of non-targeted expenditures but also address a direct market demand, thereby increasing loyalty and depth of engagement.

As a result of the conducted study, it is substantiated that achieving high efficiency in advertising budget expenditure in the services sector requires revisiting established segmentation practices based predominantly on static socio-demographic characteristics. Instead, it is proposed to implement a multi-level adaptive segmentation model integrated with predictive analytics mechanisms. Such a system dynamically forms consumer clusters based on comprehensive consideration of behavioral, contextual, and temporal factors, which makes it possible to significantly optimize resources and enhance return on marketing investments.

The innovative approach is not limited to mere cost reduction: by forecasting individual needs and preferences of the audience, a higher-quality and more personalized dialogue with clients is established. Ultimately, this creates a foundation for long-term, mutually beneficial relationships in which both the company and the consumer gain sustainable advantages — from increased loyalty to growth in conversion rates and extension of customer lifetime.

4. Conclusion

As a result of the conducted research a multi-component model of target audience analysis oriented toward the optimization of advertising budget allocation in service-sector enterprises has been formulated and theoretically substantiated. The objective of the study was successfully achieved: a conceptual framework has been constructed that integrates various methods of customer data collection and processing, thereby opening opportunities for more well-grounded and flexible planning of marketing investments.

A systematic review of the specialized literature made it possible to identify several key trends: a shift of scientific interest toward consumers' behavioral and psychographic characteristics, as well as the widespread application of predictive analytics and machine learning algorithms for forecasting the dynamics of client indicators. These trends underpin the proposed model and justify its relevance in rapidly changing market conditions.

The principal empirical finding of the work confirmed the hypothesis that a synergistic approach to audience analysis surpasses traditional methods. In particular, the developed four-level structure—comprising the collection and consolidation of heterogeneous data; multi-stage segmentation (socio-demographic, behavioral, and psychographic); construction of predictive models (customer lifetime value forecast and churn probability); and dynamic optimization of budget allocations—demonstrates an increase in marketing investment profitability metrics and a reduction in customer acquisition cost.

The practical value of the proposed methodology lies in transforming the traditional static budgeting process into an adaptive, self-learning system capable of real-time adjustment of expenditure items based on up-to-date consumer behavior data. Moreover, the integration of tools such as Customer Journey Mapping, RFM analysis, psychographic profiling, and multichannel attribution analysis (MTA) models creates a unified cycle of customer interaction management and enables the construction of personalized communications at each stage of brand contact.

Thus, the study contributes to the theory of service marketing by offering a solution to one of the current scientific problems—the elimination of the gap between growing volumes of customer data and effective strategies for their utilization. The proposed model constitutes an applied instrument that can be readily adapted to the specifics of any given company and facilitates the formation of a sustainable competitive advantage in today's saturated market.

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