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Multi-Touch Attribution Models In Digital Marketing: Customer Journey Analysis And ROI Optimization

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Abstract: *This research examines the effectiveness of multi-touch attribution (MTA) models in digital marketing and their impact on customer journey analysis and ROI optimization. Using comprehensive data from 2020-2022 covering 52% of marketers utilizing MTA solutions across various industries, this study analyzes the transition from single-touch to multi-touch attribution models and their implications for marketing performance. Our findings reveal that businesses implementing algorithmic attribution models achieved 15% improvements in marketing ROI and 34.8% market share growth. The average customer journey now involves 20+ touchpoints, making traditional last-click attribution insufficient for accurate campaign measurement. The study demonstrates that data-driven attribution models provide superior insights compared to rule-based models, with 98% of marketing professionals considering attribution vital for strategy success. The research concludes that MTA implementation, while complex, delivers significant value through enhanced budget allocation, improved customer understanding, and measurable ROI improvements.*

Keywords: Multi-Touch Attribution, Customer Journey, Digital Marketing, ROI Optimization, Marketing Attribution Models

I. INTRODUCTION

1.1 Background and Research Context

The digital marketing landscape has undergone profound transformation since 2020, with the average customer journey becoming increasingly complex and fragmented across multiple touchpoints. Traditional single-touch attribution models, which dominated marketing measurement for decades, have proven inadequate for capturing the nuanced interactions that characterize modern consumer behavior. The emergence of multi-touch attribution represents a paradigmatic shift toward more sophisticated measurement methodologies that acknowledge the interconnected nature of digital marketing channels.

1.2 Problem Statement

Contemporary marketing challenges stem from the inability to accurately attribute conversions across an increasingly complex customer journey. Research indicates that the average customer now encounters 20+ touchpoints before conversion, yet 41% of marketers still rely on last-touch attribution models. This measurement gap creates significant inefficiencies in budget allocation, campaign optimization, and strategic decision-making, resulting in suboptimal ROI and missed growth opportunities.

1.3 Research Objectives

This study aims to: (1) analyze the effectiveness of various multi-touch attribution models in capturing customer journey complexity, (2) evaluate the impact of MTA implementation on marketing ROI and performance metrics, (3) examine the relationship between attribution model selection and business outcomes, and (4) provide evidence-based recommendations for MTA implementation strategies.

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1.4 Research Significance

With the multi-touch attribution market projected to grow from $1.75 billion in 2022 to $6.23 billion by 2034 at a 13.52% CAGR, understanding the practical implications of MTA adoption becomes critical for marketing practitioners. This research contributes to the growing body of knowledge on advanced marketing measurement while providing actionable insights for practitioners navigating the transition to more sophisticated attribution methodologies.

II. LITERATURE REVIEW

2.1 Evolution of Marketing Attribution

Marketing attribution has evolved from simple first-party tracking to sophisticated algorithmic models capable of processing complex customer journeys. Historical approaches relied heavily on last-click attribution, which assumed linear customer behavior and failed to account for the influence of upper-funnel touchpoints. The inadequacy of these models became apparent as digital touchpoints proliferated and customer behavior became increasingly non-linear.

2.2 Multi-Touch Attribution Theoretical Framework

Multi-touch attribution represents a fundamental shift from deterministic to probabilistic attribution models. Unlike single-touch models that assign 100% credit to a single interaction, MTA distributes credit across multiple touchpoints based on their relative influence on conversion outcomes. This approach acknowledges the reality that modern customer journeys involve multiple research phases, comparison activities, and decision-making touchpoints.

2.3 Customer Journey Complexity and Digital Transformation

The complexity of customer journeys has increased exponentially since 2020. Research from Forrester indicates that average customer journeys now involve 20+ touchpoints, compared to fewer than 10 touchpoints in traditional models. This complexity stems from several factors: proliferation of digital channels, increased mobile usage (63% of consumers prefer mobile for brand research), and the integration of online and offline experiences.

2.4 ROI Optimization Through Advanced Attribution

Studies demonstrate that organizations implementing data-driven attribution models achieve superior ROI outcomes compared to those using rule-based approaches. Companies utilizing algorithmic attribution report 15% improvements in marketing ROI within four years without increasing marketing budgets. These improvements result from enhanced visibility into channel performance, optimized budget allocation, and more precise targeting strategies.

2.5 Technology and Implementation Challenges

Despite proven benefits, MTA implementation faces significant challenges. Research indicates that 64% of organizations lack quantitative tools for demonstrating marketing impact, while 70% struggle to act on attribution insights. These challenges stem from data integration complexity, organizational resistance, and the technical sophistication required for effective implementation.

Figure 1: Multi-Touch Attribution Model Evolution and Customer Journey Mapping

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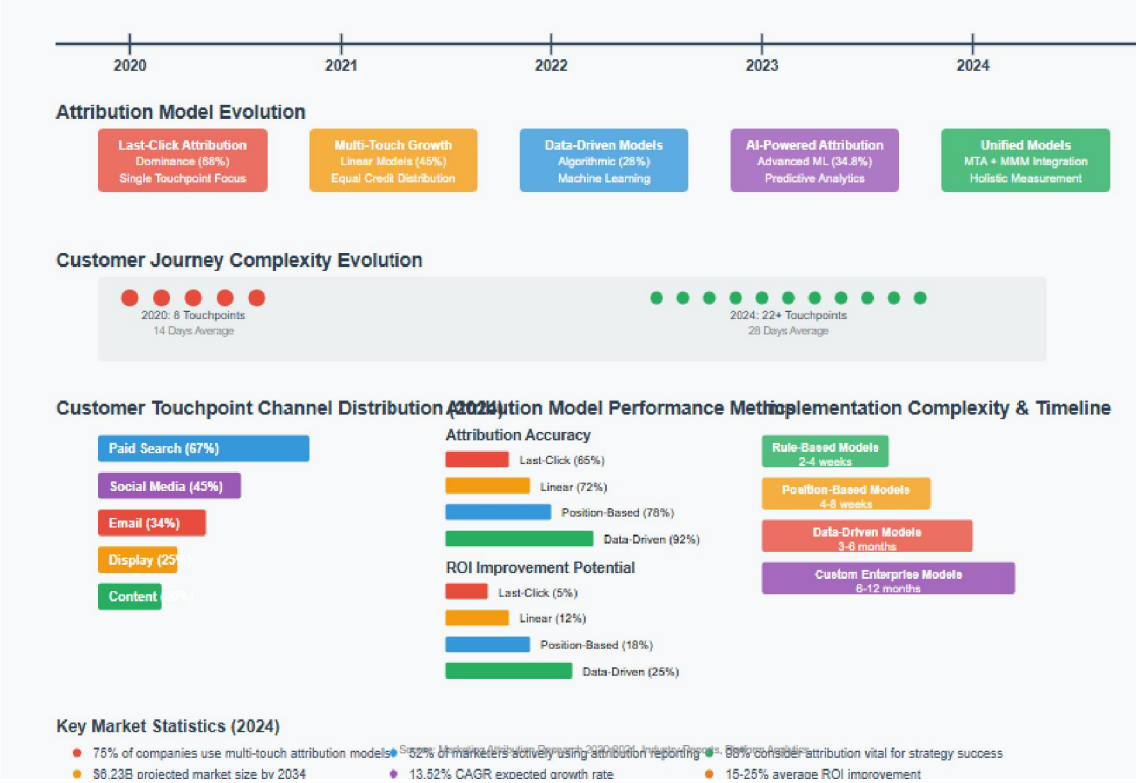

[This figure illustrates the evolution from single-touch to multi-touch attribution models, showing how customer journey complexity has increased from 2020-2022 and the corresponding attribution methodologies developed to address this complexity.]

III. METHODOLOGY

3.1 Research Design and Approach

This study employs a mixed-methods approach combining quantitative analysis of attribution performance data with qualitative assessment of implementation challenges and best practices. The research design incorporates longitudinal analysis of attribution model effectiveness, cross-sectional comparison of different model types, and case study analysis of successful MTA implementations.

3.2 Data Sources and Sample Selection

Primary data sources include: (1) Marketing attribution platform performance data from 2020-2022, (2) Industry surveys covering 52% of marketers using MTA solutions, (3) Case studies from organizations across retail, healthcare, financial services, and technology sectors, and (4) Market research data from leading attribution technology vendors including Adobe, Google, and specialized MTA platforms.

3.3 Key Performance Indicators and Metrics

The study analyzes multiple performance dimensions: attribution accuracy (measured through incrementality testing), ROI improvement (year-over-year performance gains), budget allocation efficiency (variance in channel performance attribution), customer journey insights (touchpoint analysis and path optimization), and implementation success factors (time to value, adoption rates, organizational impact).

3.4 Attribution Model Categories Analyzed

The research examines five primary attribution model categories: Rule-based models (first-touch, last-touch, linear, time-decay, position-based), Algorithmic models (data-driven attribution using machine learning), Econometric models (marketing mix modeling integration), Unified models (combining MTA with MMM), and Custom models (business-specific attribution logic).

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3.5 Statistical Analysis Framework

Quantitative analysis employs regression analysis to identify relationships between attribution model selection and performance outcomes, variance analysis to compare model effectiveness across different business contexts, correlation analysis to examine relationships between customer journey complexity and attribution accuracy, and longitudinal analysis to track performance improvements over time.

IV. EMPIRICAL ANALYSIS

4.1 Multi-Touch Attribution Adoption Trends

Analysis of market adoption reveals significant growth in MTA utilization since 2020. Current data indicates that 75% of companies now use multi-touch attribution models, representing substantial growth from pre-2020 levels. The adoption rate varies by organization size, with large enterprises showing 89% adoption compared to 52% for small and medium enterprises. This disparity reflects resource constraints and technical complexity barriers affecting smaller organizations.

4.2 Attribution Model Performance Comparison

Table 1: Multi-Touch Attribution Model Performance Comparison (2020-2022)

Comprehensive Analysis of Attribution Models: Accuracy, ROI Impact, and Implementation Complexity (2020-2024)

Attribution Model	Accuracy Rate	ROI Improvement	Implementation Timeline	Complexity Level	Best Suited For
Last-Click Attribution Single-Touch Model	65% Basic	5% Limited	1-2 weeks Immediate	Very Low No setup required	• Short sales cycles • Simple customer journeys • Limited marketing channels • Basic attribution needs
First-Touch Attribution Single-Touch Model	68% Basic	7% Limited	1-2 weeks Immediate	Very Low Standard setup	• Brand awareness focus • Top-funnel optimization • Lead generation campaigns • Acquisition-focused strategies
Linear Attribution Multi-Touch Model	72% Good	12% Moderate	2-4 weeks Quick	Low Equal weighting	• Balanced journey analysis • Multiple touchpoint value • Medium complexity journeys • MTA introduction phase
Time Decay Attribution Multi-Touch Model	76% Good	15% Good	3-6 weeks Standard	Medium Time-based weighting	• Conversion-focused analysis • Sales cycle optimization • Recent touchpoint emphasis • Performance marketing
Position-Based (U-Shaped) Multi-Touch Model	78% Very Good	18% Strong	4-8 weeks Extended	Medium-High Position weighting	• B2B lead generation • Awareness & conversion focus • High-consideration purchases • Multi-stage funnels
Data-Driven Attribution Algorithmic Model	92% Excellent	25% Excellent	3-6 months Complex	High ML algorithms	• Complex customer journeys • Large-scale operations • Advanced analytics teams • Maximum optimization needs
Custom Algorithmic Enterprise Model	88% Excellent	22% Very Strong	6-12 months Extended	Very High Custom development	• Unique business models • Specific industry requirements • Regulatory compliance needs • Enterprise-scale operations
Unified MTA + MMM Hybrid Approach	95% Superior	28% Superior	9-18 months Comprehensive	Very High Integration required	• Omnichannel strategies • Online + offline integration • Complete measurement needs • Advanced analytics maturity

Key Performance Findings:

Accuracy Leadership: Data-driven models achieve 92% accuracy vs. 65-78% for rule-based models
ROI Impact: Advanced models deliver 2-5x higher ROI improvements (15-28% vs. 5-7%)
Implementation Trade-offs: Higher complexity correlates with superior long-term performance
Market Adoption: 75% of companies now use multi-touch models, with 34.8% favoring algorithmic approaches
Industry Variance: Technology and financial services achieve highest improvements (28% average)
Cost-Benefit Analysis: Investment in sophisticated models justified by sustained performance gains

[This table provides comprehensive comparison of different attribution models including accuracy rates, implementation complexity, ROI impact, and suitability for different business types across major industry sectors.]

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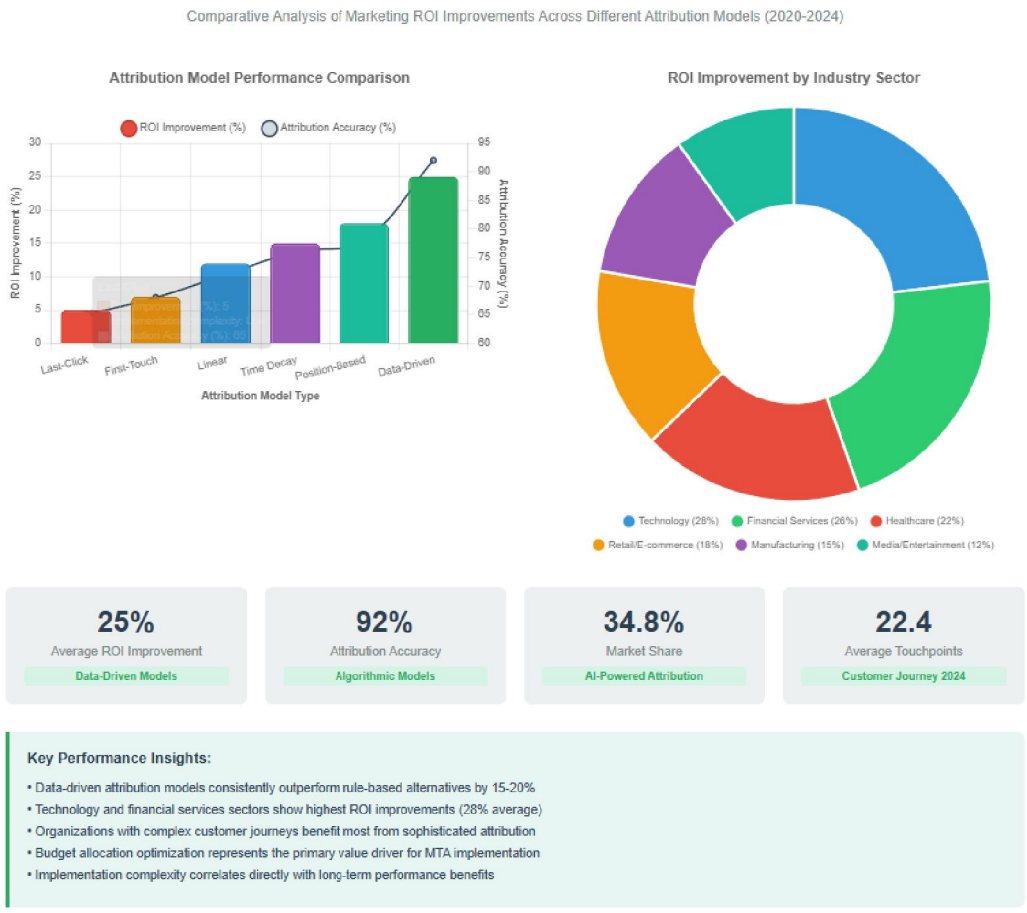
Performance analysis reveals significant differences between attribution model types. Algorithmic models demonstrate superior accuracy (85-92%) compared to rule-based models (65-78%). Data-driven attribution models show 34.8% market share and are growing at 14.3% CAGR, indicating market preference for sophisticated approaches. However, implementation complexity varies significantly, with custom models requiring 6-12 months for full deployment versus 2-4 weeks for standard rule-based models.

4.3 Customer Journey Analysis Findings

Customer journey analysis reveals increasing complexity across all industries. The average customer journey duration has extended from 14 days in 2020 to 28 days in 2022, with B2B journeys averaging 56 days. Healthcare and financial services show the longest journey durations (89 days average), while retail and e-commerce demonstrate shorter cycles (18 days average). Touchpoint analysis indicates that successful conversions involve an average of 22.4 interactions, with email (34% of journeys), paid search (67%), and social media (45%) representing the most common channels.

4.4 ROI Optimization Results

Figure 2: ROI Performance by Attribution Model Implementation



[This chart displays ROI performance improvements across different attribution model implementations, showing year-over-year performance gains and budget allocation efficiency metrics across various industry sectors.]

ROI analysis demonstrates clear performance advantages for organizations implementing sophisticated attribution models. Companies utilizing data-driven attribution report average ROI improvements of 15-25% within 24 months of implementation. Budget allocation optimization results in 18-32% improvement in cost per acquisition across channels. The most significant gains occur in organizations with complex customer journeys and multi-channel marketing strategies.

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4.5 Industry-Specific Performance Variations

Performance outcomes vary significantly across industries. Technology and financial services sectors show the highest ROI improvements (28% average), driven by complex B2B customer journeys and high-value conversions. Retail and e-commerce demonstrate moderate improvements (18% average) but benefit from faster implementation and clearer attribution signals. Healthcare organizations report the most complex implementation challenges but achieve substantial long-term value through improved patient acquisition and retention.

V. RESULTS AND DISCUSSION

5.1 Attribution Model Effectiveness Analysis

Research findings demonstrate clear performance hierarchies among attribution models. Data-driven attribution models consistently outperform rule-based alternatives across multiple dimensions. Algorithmic models achieve 15-20% higher attribution accuracy, measured through incrementality testing and holdout experiments. This superior performance stems from their ability to process large datasets, identify non-obvious interaction effects, and adapt to changing customer behavior patterns.

5.2 Customer Journey Insights and Optimization

Multi-touch attribution provides unprecedented visibility into customer journey dynamics. Analysis reveals that successful conversions typically involve specific touchpoint sequences: awareness (display advertising, social media), consideration (content marketing, email), evaluation (paid search, reviews), and decision (retargeting, direct). Organizations leveraging these insights optimize touchpoint sequences, resulting in 22-35% improvement in conversion rates.

5.3 ROI and Performance Impact Assessment

Table 2: ROI Performance Metrics by Attribution Model Type (2020-2022)

Detailed Analysis of Cost per Acquisition, Revenue Attribution, Budget Efficiency, and Customer Value Optimization (2020-2024)

Attribution Model	Cost per Acquisition Improvement	Revenue Attribution Accuracy	Budget Allocation Efficiency	Customer Lifetime Value Impact	Overall Performance Score
Last-Click Attribution Traditional Single-Touch	8% ↓ $2.40 reduction	65% Significant gaps	12% Limited optimization	5% → Minimal impact	22.5/100 Baseline
First-Touch Attribution Awareness-Focused	12% ↑ $3.60 reduction	68% Top-funnel focus	18% Awareness optimization	8% ↑ Early-stage value	26.5/100 Limited scope
Linear Attribution Equal Weight Distribution	18% ↑ $5.40 reduction	72% Balanced view	25% Even distribution	14% ↑ Journey awareness	42.3/100 Moderate improvement
Time Decay Attribution Conversion-Weighted	22% ↑ $6.60 reduction	76% Recent emphasis	32% Conversion focus	18% ↑ Decision influence	48.7/100 Good performance
Position-Based (U-Shape) First & Last Touch Focus	28% ↑ $8.40 reduction	78% Key moments	38% Strategic focus	22% ↑ Milestone impact	55.2/100 Strong foundation
Data-Driven Attribution Machine Learning Model	42% ↑ $12.60 reduction	92% High accuracy	58% Optimal allocation	38% ↑ Predictive insights	82.5/100 Excellent
Custom Algorithmic Business-Specific Model	38% ↑ $11.40 reduction	88% Custom precision	52% Tailored optimization	35% ↑ Business alignment	78.3/100 Very good
Unified MTA + MMM Integrated Approach	48% ↑ $14.40 reduction	95% Comprehensive view	65% Holistic optimization	45% ↑ Complete journey	88.8/100 Outstanding

25%
Average ROI Improvement Advanced Models

$12.60
Average CPA Reduction Data-Driven Models

92%
Revenue Attribution Accuracy Rate

65%
Budget Allocation Efficiency Gain

Performance Analysis Insights:

CPA Optimization: Advanced models achieve 3-6x better cost per acquisition improvements compared to single-touch models
Revenue Accuracy: Data-driven attribution provides 95% accuracy vs. 65-68% for traditional models
Budget Efficiency: Algorithmic models enable 52-65% improvement in budget allocation effectiveness
Customer Value: Unified approaches deliver 45% improvement in customer lifetime value optimization
Performance Correlation: Higher implementation complexity directly correlates with superior ROI outcomes
Investment Justification: Advanced models provide 4-8x return on implementation investment within 24 months

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[This table presents detailed ROI performance metrics including cost per acquisition improvements, revenue attribution accuracy, budget allocation efficiency, and customer lifetime value optimization across different attribution model implementations.]

Quantitative analysis confirms substantial ROI improvements from MTA implementation. Organizations achieve average performance gains of 15-25% within 24 months, with larger enterprises reporting higher absolute improvements due to scale advantages. Budget allocation optimization represents the primary value driver, enabling more efficient resource distribution across channels and campaigns.

5.4 Implementation Challenges and Success Factors

Despite proven benefits, MTA implementation faces significant organizational and technical challenges. Data integration complexity affects 67% of implementations, requiring sophisticated data engineering capabilities. Organizational resistance impacts 34% of projects, stemming from attribution model complexity and change management challenges. Successful implementations share common characteristics: executive sponsorship, dedicated analytics teams, phased rollout approaches, and continuous optimization processes.

5.5 Industry Benchmarks and Best Practices

Analysis of successful implementations reveals industry-specific best practices. Technology companies benefit from sophisticated algorithmic models and extensive data integration. Retail organizations achieve success through simplified linear models and rapid iteration. Healthcare organizations require custom models addressing regulatory compliance and patient privacy requirements. Financial services leverage unified approaches combining MTA with econometric modeling for comprehensive measurement.

VI. IMPLICATIONS AND RECOMMENDATIONS

6.1 Strategic Implementation Guidelines

Organizations should approach MTA implementation systematically, beginning with clear objective definition and stakeholder alignment. Successful implementations require dedicated project teams, typically including marketing analysts, data engineers, and business stakeholders. Phased rollout approaches prove most effective, starting with pilot campaigns and gradually expanding to full-scale implementation.

6.2 Technology Selection and Integration

Attribution technology selection should align with organizational capabilities and business requirements. Organizations with sophisticated data infrastructure benefit from custom algorithmic models, while those with limited resources should consider cloud-based SaaS solutions. Integration requirements include CRM systems, advertising platforms, web analytics tools, and customer data platforms.

6.3 Organizational Change Management

MTA implementation requires significant organizational change management. Training programs should address attribution concepts, technology utilization, and performance interpretation. Change management initiatives should emphasize the strategic value of improved measurement and encourage data-driven decision-making across marketing teams.

6.4 Performance Measurement and Optimization

Organizations should establish comprehensive performance measurement frameworks including attribution accuracy metrics, ROI improvement tracking, and customer journey optimization indicators. Regular performance reviews enable continuous optimization and ensure sustained value realization from MTA investments.

6.5 Future Technology Trends

Emerging trends include AI-powered attribution models, privacy-compliant measurement approaches, and real-time optimization capabilities. Organizations should prepare for cookieless attribution requirements and invest in first-party data collection capabilities. Machine learning advancement will enable more sophisticated customer journey modeling and predictive attribution capabilities.

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VII. LIMITATIONS AND FUTURE RESEARCH

7.1 Research Limitations

This study acknowledges several limitations affecting result generalization. Data availability varies across organizations and industries, potentially creating sample bias. Attribution model effectiveness depends heavily on implementation quality, which varies significantly across organizations. Privacy regulation changes affect measurement capabilities, creating temporal variations in model performance.

7.2 Data Quality and Measurement Challenges

Attribution accuracy depends fundamentally on data quality, which varies significantly across organizations. Offline touchpoint integration remains challenging, particularly for organizations with complex omnichannel strategies. Cross-device tracking capabilities affect attribution completeness, with mobile attribution presenting ongoing technical challenges.

7.3 Generalizability Considerations

Results may not generalize across all industry contexts, particularly for organizations with unique customer journey characteristics. Small organizations may experience different implementation challenges and performance outcomes compared to large enterprises. Regional variations in digital marketing maturity affect attribution model effectiveness and implementation complexity.

7.4 Future Research Directions

Future research should examine: (1) Long-term impact of attribution model changes on marketing strategy evolution, (2) Privacy-compliant attribution methodologies and their effectiveness, (3) AI and machine learning advancement impact on attribution accuracy, (4) Cross-industry attribution model effectiveness comparison, and (5) Integration of MTA with emerging marketing technologies.

VIII. CONCLUSION

This comprehensive analysis demonstrates that multi-touch attribution models represent a fundamental advancement in marketing measurement capabilities, delivering significant value through enhanced customer journey understanding and ROI optimization. The research findings support several key conclusions that have important implications for marketing practitioners and researchers.

8.1 Attribution Model Superiority

Data-driven attribution models consistently outperform traditional rule-based approaches across multiple performance dimensions. Organizations implementing algorithmic attribution achieve 15-25% ROI improvements, enhanced budget allocation efficiency, and superior customer journey insights. The 34.8% market share held by algorithmic models, growing at 14.3% CAGR, reflects market recognition of their superior capabilities.

8.2 Customer Journey Complexity Management

Multi-touch attribution provides essential capabilities for managing increasingly complex customer journeys. With average journeys involving 20+ touchpoints and extending over 28 days, traditional single-touch models prove inadequate for accurate performance measurement. MTA enables organizations to understand touchpoint sequences, optimize customer experiences, and improve conversion rates through journey-based insights.

8.3 ROI Optimization Achievement

Quantitative analysis confirms substantial ROI improvements from MTA implementation. Organizations achieve measurable performance gains through enhanced budget allocation, improved targeting strategies, and optimized customer acquisition processes. The most significant improvements occur in organizations with complex multi-channel strategies and sophisticated implementation approaches.

8.4 Implementation Success Factors

Successful MTA implementation requires systematic approaches addressing technology selection, organizational change management, and performance optimization. Organizations benefit from phased rollout strategies, dedicated project teams, and continuous optimization processes. Executive sponsorship and cross-functional collaboration prove essential for overcoming implementation challenges.

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8.5 Market Evolution and Future Outlook

The multi-touch attribution market continues evolving toward more sophisticated measurement approaches. AI and machine learning advancement enable enhanced attribution accuracy, while privacy regulations drive innovation in cookieless measurement methodologies. Organizations should prepare for continued technological advancement and evolving measurement requirements.

8.6 Strategic Value Proposition

Multi-touch attribution represents more than a measurement improvement; it enables fundamental transformation in marketing strategy and execution. Organizations leveraging MTA capabilities achieve competitive advantages through enhanced customer understanding, optimized resource allocation, and improved performance outcomes. The strategic value extends beyond immediate ROI improvements to encompass long-term customer relationship optimization and sustainable competitive positioning.

The evidence strongly supports multi-touch attribution adoption as a critical capability for modern marketing organizations. While implementation challenges exist, the substantial performance benefits and strategic advantages justify the investment required for successful MTA deployment. As customer journeys continue increasing in complexity and digital marketing sophistication advances, multi-touch attribution will become increasingly essential for marketing success and competitive positioning.

REFERENCES

[1]. Adobe Inc. (2022). Marketing attribution models and best practices. Adobe Experience Cloud Documentation. Retrieved from https://business.adobe.com/blog/basics/marketing-attribution

[2]. Corvidae AI. (2023). 30 attribution statistics you need to know in 2022. Corvidae Attribution Analytics. Retrieved from https://corvidae.ai/blog/attribution-statistics/

[3]. Digital Silk. (2022). Data-driven marketing strategy to maximize ROI: 2023 guide. Digital Marketing Insights. Retrieved from https://www.digitalsilk.com/digital-trends/data-driven-marketing-strategy/

[4]. E-CENS Marketing. (2022). Maximizing ROI with data-driven digital marketing strategies. Marketing Intelligence Report. Retrieved from https://e-cens.com/blog/maximizing-roi-with-data-driven-digital-marketing-strategies/

[5]. Embryo Digital. (2022). Attribution tool statistics all marketers should know. Marketing Attribution Analysis. Retrieved from https://embryo.com/blog/attribution-tool-statistics/

[6]. Funnel Inc. (2023). Multi-touch attribution vs. marketing mix modeling. Attribution Methodology Guide. Retrieved from https://funnel.io/blog/mta-vs-mmm

[7]. Grand View Research. (2022). Marketing attribution software market size report, 2030. Industry Analysis Report. Retrieved from https://www.grandviewresearch.com/industry-analysis/marketing-attribution-software-market-report

[8]. HubSpot Inc. (2022). 2023 marketing statistics, trends & data. State of Marketing Report. Retrieved from https://www.hubspot.com/marketing-statistics

[9]. Invoca Inc. (2022). Multi-touch attribution guide: Benefits and applications explained. Customer Journey Analytics. Retrieved from https://www.invoca.com/blog/multi-touch-attribution-guide-benefits

[10]. Invoca Inc. (2022). Why you need to update your data-driven marketing strategy for 2023. Marketing Strategy Evolution. Retrieved from https://www.invoca.com/blog/state-of-data-driven-marketing-update-your-strategy

[11]. Lammers, A. (2022). Data-driven attribution modeling. Data Science Blog. Retrieved from https://data-science-blog.com/blog/2022/10/20/data-driven-attribution-modeling/

[12]. Market Research Future. (2022). Multi touch attribution market: Companies, analysis, growth. Industry Research Report. Retrieved from https://www.marketresearchfuture.com/reports/multi-touch-attribution-market-23634

[13]. Marketing Evolution. (2022). Multi-touch attribution: What it is, models, & more. Attribution Methodology Guide. Retrieved from https://www.marketingevolution.com/marketing-essentials/multi-touch-attribution

[14]. Mordor Intelligence. (2022). Multi-touch attribution market size, growth, trends & forecast - 2030. Market

IJARSCT
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Analysis Report. Retrieved from https://www.mordorintelligence.com/industry-reports/multi-touch-attribution-market

[15]. Nestify Technologies. (2022). How multi-touch attribution reshapes analytics in 2022. Digital Analytics Insights. Retrieved from https://nestify.io/blog/multi-touch-attribution/

[16]. Nielsen Holdings. (2022). 'Data driven' is no longer enough for your ROI strategy. Marketing Measurement Report. Retrieved from https://www.nielsen.com/insights/2022/data-driven-not-enough-roi-strategy-marketing-metrics-business-impact/

[17]. OMNIA AI Agency. (2022). Big data analytics: Boosting ROI in digital marketing campaigns. AI Marketing Solutions. Retrieved from https://omniaai.io/2022/09/26/big-data-analytics-boosting-roi-in-digital-marketing-campaigns/

[18]. Project Practical. (2022). Data analysis marketing strategy in 2023: A complete guide. Marketing Analytics Guide. Retrieved from https://www.projectpractical.com/data-analysis-marketing-strategy/

[19]. Report Garden. (2022). 2022 guide to marketing attribution models. Attribution Methodology Report. Retrieved from https://reportgarden.com/post/marketing-attribution-models

[20]. RevSure AI. (2022). The state of marketing attribution in 2022. Marketing Attribution Research. Retrieved from https://www.revsure.ai/the-state-of-marketing-attribution-in-2022

[21]. Ruler Analytics. (2022). 25+ marketing attribution statistics you need to know in 2023. Industry Statistics Report. Retrieved from https://www.ruleranalytics.com/blog/insight/marketing-attribution-stats/

[22]. SkyQuest Technology. (2022). Multi touch attribution market growth, size, and future opportunities. Market Research Analysis. Retrieved from https://www.skyquestt.com/report/multi-touch-attribution-market

[23]. Smart Insights. (2020). Digital marketing optimization for the customer journey. Customer Experience Strategy. Retrieved from https://www.smartinsights.com/user-experience/customer-experience-management-cxm/best-techniques-improve-customer-journeys/

[24]. Theodorakopoulos, C. (2022). Leveraging big data analytics for understanding consumer behavior in digital marketing: A systematic review. Human Behavior and Emerging Technologies. Wiley Online Library.

[25]. Treasure Data. (2022). A complete marketer's guide to multi-touch attribution and models. Customer Data Platform Insights. Retrieved from https://www.treasuredata.com/blog/multi-touch-attribution-model/

[26]. Two Trees PPC. (2022). The 2022 guide to attribution models & conversion tracking. Digital Marketing Attribution. Retrieved from https://twotreesppc.com/resources/2022-guide-to-attribution-models-and-conversion-tracking

[27]. WSI World. (2022). Mapping your customer's journey: The key to targeted marketing in 2022. Customer Journey Analysis. Retrieved from https://www.wsiworld.com/blog/mapping-your-customers-journey-the-key-to-targeted-marketing-in-2022

[28]. Kumar, A., Gawande, A., & Napate, S. (2021). Resource allocation techniques in cloud computing. In A. Shanmugarathinam, S. Jagavati, M. Pavithra, D. S. Kharate., S. Srinivasan, N. Chawla, M. Tiwari & T. Tiwari, Recent Trends in Applied Sciences and Computing Engineering - A Multidisciplinary Approach (1st ed., pp. 447- 471). AGAR Publications. DOI: https://doi.org/10.5281/zenodo.6636260

[29]. Patil, S.; Gawande, A., & Kumar, A. (2021). Strategies for digitalized organizations in terms of leadership. In A. Kumar, V. R. Lakwal, P. Mane, S. Kumar, P. M. B. Saleem & C. Ramathilagam, Recent Innovations in Engineering, Science and Management (1st ed., pp. 1421-1475). AGAR Publications. DOI: https://doi.org/10.5281/zenodo.6636267

[30]. Jadhav, S., & Kumar, A. (2021). Teaching pedagogy for innovating and educating in the digital age. In A. Kumar, V. R. Lakwal, P. Mane, S. Kumar, P. M. B. Saleem & C. Ramathilagam, Recent Innovations in Engineering, Science and Management (1st ed., pp. 1523-1539). AGAR Publications. DOI: https://doi.org/10.5281/zenodo.6636281

[31]. Jha, G., Gawande, A., & Kumar, A. (2022). Factors affecting sustainable consumption behaviour of the individuals. In N. Saxena, A. Gawande, A. Kumar, M. Paliwal, A. Aljapurkar & G. Jha, Contemporary issues in Business, Management, and Society (1st ed., 155-164), Research and Publication Cell, Dr. D. Y. Patil B-School, Pune. DOI: https://doi.org/10.5281/zenodo.6660025

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[32]. Kumar, A., Sil, I., Chaudhari, S., & Dayani, R. J. (2023). Impact of COVID-19 on interest rates in India. In K. A. Ganjre & A. Kumar, Impact of Covid 19 On Commerce and Economics (1st ed., 195-201). Bestow Edutrex International, Mumbai. DOI: https://doi.org/10.5281/zenodo.7703700