

UNDERSTANDING THE NETWORK EFFECT BETWEEN DIFFERENT MARKETING CHANNELS IN RETAIL MEDIA NETWORKS

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Abstract

Retail Media Networks (RMNs) have emerged as an important component of modern digital advertising, offering advertisers access to high-intent audiences on retail platforms. These networks deploy a range of marketing tactics across the purchase funnel - from awareness to consideration to conversion. RMNs provide the opportunity to reach shoppers at each stage of their shopping journey using different tactics and media plans. Despite their varied functions, these channels do not operate in silos. Though these channels might seem independent and serve very different use cases, the effect of one channel on a different one cannot be ignored. This paper explores the network effect between different marketing channels within RMNs, demonstrating how activity in one part of the funnel influences performance in others. Through empirical evidence, theoretical perspectives, and industry case studies, we establish the synergistic interdependence of RMN tactics. The paper explores current literature where authors have tried to identify and quantify the network effect between different channels in media. It has also analyzed how the major RMNs of the industry have benefited from the network effect between channels. This paper provides actionable insights and implications for advertisers seeking to optimize omnichannel media strategies through an integrated marketing approach. It can also help advertisers to draft media plans based on the various tactics they wish to implement and how multiple channels can be used to achieve their marketing goals. It is important to understand the channels and their combinations which have a higher impact on the shopper journey depending on the nature of the product, where it lies in the product lifecycle, seasonality trends, external factors like launch of a new product or event, etc.

Keywords—Retail Media Networks, Network Effects, Marketing Channels, Advertising Synergies, Consumer Funnel, Marketing Funnel

I. INTRODUCTION

A Retail Media Network (RMN) is an advertising platform owned by a retailer that allows brands to advertise to the retailer's customers using its digital avenues, such as website, app, email, or in-store displays. Retail Media Networks represent a transformation in advertising by leveraging first-party data and real-time shopper intent to target users across various touchpoints. These networks, hosted by major retailers such as Amazon, Walmart, Target, and Instacart, allow brands to engage consumers within digital and physical retail environments. The total RMN spend in 2022 was ~\$27.5B, and is expected to rise throughout the decade [Figure1]. Brands invest in RMNs through multiple channels, including sponsored search, display advertising, offsite programmatic media, influencer partnerships, native product placements, and streaming TV ads.

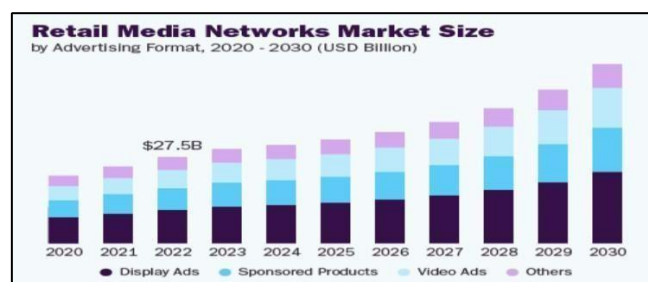


Figure 1 - Retail Media Network Market Size [17]

Traditionally, these tactics are mapped with distinct stages of the customer funnel - top (awareness), middle (consideration), and bottom (conversion). However, this traditional model often oversimplifies the complex, non-linear nature of modern consumer journeys. Modern evidence suggests that these marketing efforts have a compounding effect due to the connection between consumer perception and behavior across touchpoints [1]. As consumers are exposed to ads across multiple channels, the overall brand impact gets stronger, increasing the likelihood of conversion and brand loyalty. The rise of omnichannel commerce and mobile usage has further brought the different stages of a funnel together. For instance, a consumer may see an Instagram ad (awareness), click through to a product landing page (consideration), and complete the purchase later via a search ad (conversion) - all within a few hours. Understanding these touchpoints as interconnected rather than linear is essential for modern media planning. Figure 2 illustrates the retail media network ecosystem, highlighting the cyclical relationship between the retailer, advertiser, and customer, and how first-party data fuels ad targeting, measurement, and optimization.

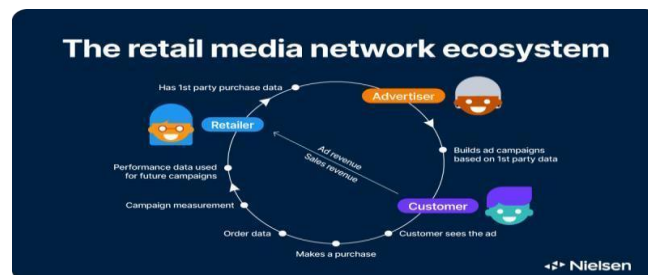


Figure 2 - Retail Media Network Ecosystem [15]

II. LITERATURE REVIEW

Marketing Funnel and Retail Media Tactics: The marketing funnel is typically divided into three main stages, each supported by a distinct set of media tactics within RMNs:

1. **Top of Funnel (ToFu):** Channels like display banners, video ads (e.g., streaming TV or in-banner videos), and influencer content on social media platforms are primarily aimed at building brand awareness. These channels aim to capture attention, increase brand recall, and educate consumers about new or existing products [2]. They act as the first touchpoint between a customer and a brand.

2. **Mid Funnel (MoFu):** This stage is focused on building interest and encouraging consideration. Tactics such as email marketing, product review content, and retargeting ads help brands stay top-of-mind as consumers evaluate options. Mid-funnel strategies also include product recommendations and dynamic creative optimization (DCO) to tailor messages to segmented audiences. In RMNs, mid-funnel engagement is often facilitated by retargeting based on previous onsite or app behavior.

3. **Bottom of Funnel (BoFu):** At the conversion stage, consumers are ready to take action. Sponsored search, shoppable media, and dynamic product ads (DPAs) play a pivotal role in driving purchases. These tactics are usually more performance-driven and directly attributable to return on ad spend (ROAS) [3]. BoFu tactics are crucial for delivering measurable business outcomes and are often prioritized due to the high attributed revenue they generate.

Each tactic appears designed for a specific purpose. However, emerging data and industry insights show that the performance of bottom-funnel tactics can be significantly influenced by upstream tactics, underscoring the importance of a full-funnel strategy. For instance, increasing investment in ToFu campaigns has been shown to result in higher engagement and ROAS for BoFu placements, showcasing the network effect in action.

B. Conceptualizing the Network Effect in RMNs: Network effects in marketing refer to the phenomenon where the effectiveness of one marketing channel is positively impacted by the presence of others. As shown in Figure 3, customers are exposed to various channels before they make a purchase. This can manifest in several ways:

1. **Direct amplification:** Increased brand recall from a display or video ad can lead to higher click-through rates (CTR) on sponsored search listings.

2. **Traffic flow synergy:** Offsite video or programmatic ads can drive traffic to the retailer's website, which in turn increases the effectiveness of onsite tactics such as sponsored product listings.

3. **Message reinforcement:** Exposure to a consistent brand message across channels increases trust, reduces friction, and accelerates decision-making.

This interdependence is in-line with the theory of integrated marketing communications (IMC), which argues that unified messaging across multiple platforms leads to greater overall impact [4]. Naik and Raman (2003) quantified such synergies and showed that the marginal ROI from

a media strategy across multiple channels significantly exceeded that of single-channel approach.

Furthermore, the psychological principle of the "mere exposure effect" - the phenomenon whereby people develop a preference for things only because they are familiar with them - underscores the importance of repeated ad exposure across channels. A well-designed campaign that reaches consumers via social, display, and search is more likely to build familiarity and favorability.

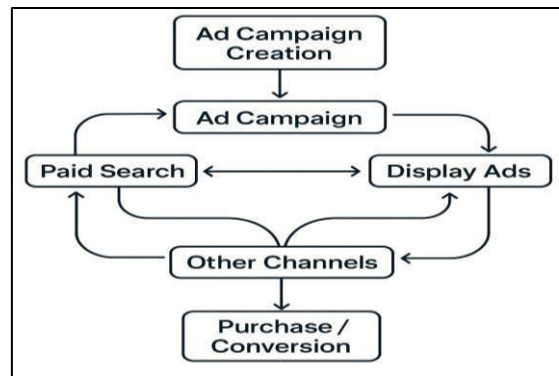


Figure 3 - Visualizing the network effect

C. Empirical Evidence of Network Effects in Advertising: A lot of present day academic literature supports the presence of network effects in marketing. For example:

1. **Shapiro & Varian (1998)** showed that consistent cross-channel ad exposure leads to improved consumer trust and memory, which are key drivers of purchase decisions [5].
2. **Anderl et al. (2016)** developed graph-based attribution models showing that upper-funnel display impressions significantly increased downstream conversions via paid search [6].
3. **Ghosh et al. (2020)** found that retailers who increased their investment in awareness tactics observed a notable uplift in click-through and conversion rates in lower-funnel tactics such as sponsored search and product listing ads [7].
4. **Li & Kannan (2014)** also demonstrated that exposure to display ads positively influenced future search behavior and conversion likelihood.

Recent work by Berman and Katona (2022) has added a dynamic modeling layer to this understanding, suggesting that strategic sequencing of ads (starting with high-reach, low-cost awareness channels) can create a cascading impact across other media investments. These studies collectively reinforce the notion that the impact of advertising extends beyond immediate metrics and contributes to a broader ecosystem of consumer influence.

D. Effectiveness of Retail Media Networks over traditional media channels and their rise: Recent studies highlight that Retail Media Networks (RMNs) often outperform traditional media channels in advertising effectiveness. RMNs leverage first-party data to deliver highly targeted ads, resulting in up to four times higher return on ad spend (ROAS) compared to other digital channels. Additionally, RMNs exhibit lower ad fraud rates and higher brand suitability, with violations 10% lower than industry benchmarks. The growth trajectory of RMNs is notable, with U.S. retail media ad revenue projected to reach \$52 billion in 2023 and expected

to hit \$61 billion in 2024. This surge indicates a shift in advertising spend from traditional channels to RMNs, driven by their ability to reach consumers at the point of purchase with personalized messaging [13]. RMNs prove beneficial to both the consumer and advertiser/retails, as seen in Figure 4.

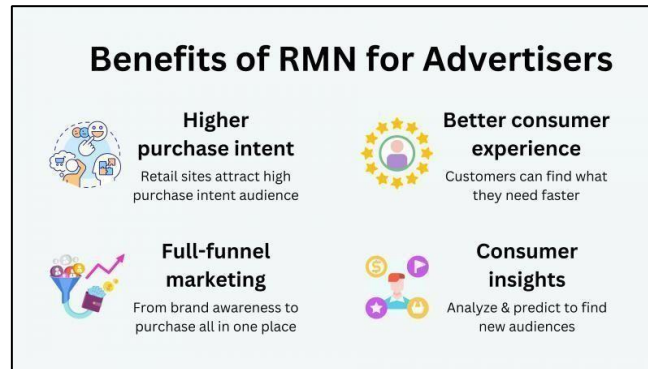


Figure 4 - Benefits of Retail Media Networks [16]

E. Real World Case Studies from Retail Media Networks:

1. **Amazon:** Amazon Ads reported that exposure to Amazon Streaming TV video ads led to a 25% increase in search engagement and a 15% increase in conversion rates for the same brand on Amazon's platform [8].
2. **Walmart Connect:** Internal measurement analyses revealed that campaigns utilizing a combination of display ads and sponsored search achieved 1.4x higher ROAS than search-only campaigns. These campaigns also showed increased add-to-cart rates, indicating a deeper level of customer engagement.
3. **Instacart:** Cross-channel campaigns that began with offsite awareness ads and followed up with in-app sponsored product placements saw up to 22% higher conversion rates compared to campaigns using only in-app ads [9]. These results were consistent across multiple verticals, including CPG and household categories.
4. **Target Roundel:** Campaigns using influencer content for awareness followed by dynamic retargeting ads drove a 30% improvement in last-click conversion rates.

*Source based on internal reports and not peer-reviewed.

In each case, the integration of different media formats across the funnel demonstrated measurable improvement in performance, validating the network effect hypothesis in real-world retail environments.

III. METHODOLOGY

A. Methodologies for Measuring Network Effects: To quantify the impact of marketing channels, several methodologies are employed in both academic and commercial settings:

1. **Incrementality Testing:** Controlled experiments (e.g., geo-based A/B tests or ghost ads) allow advertisers to isolate the true incremental impact of a marketing channel or tactic. This is particularly effective for measuring the halo effects of upper-funnel media.

2. **Multi-Touch Attribution (MTA):** MTA models assign fractional credit to each touchpoint in the customer journey. These models help quantify the influence of awareness and consideration channels that might not be evident in last-click attribution.
3. **Econometric Modeling (MMM):** MMM uses statistical models to analyze historical media and sales data. It quantifies the individual and interactive effects of marketing channels, controlling for seasonality, promotions, and external factors [10].
4. **Causal Inference Techniques:** Methods such as propensity score matching and synthetic control modeling are used to estimate the true causal effect of one channel on another in observational data.

Advanced RMNs are also beginning to use real-time experimentation platforms and AI-powered attribution systems to capture immediate and long-term cross-channel effects. As these methodologies mature, advertisers will gain more visibility into how upper-funnel and mid-funnel investments influence outcomes down the funnel. [14]

B. Strategic Implications for Advertisers: For advertisers, understanding the network effect is crucial for both tactical and strategic planning. Key implications include:

1. **Holistic Budget Allocation:** Allocating spend across the funnel rather than favoring bottom-funnel tactics can unlock hidden efficiencies and drive stronger long-term brand equity.
2. **Integrated Campaign Design:** Designing campaigns that seamlessly connect ToFu, MoFu, and BoFu tactics ensures message continuity and greater cumulative impact.
3. **Measurement Maturity:** Brands should invest in advanced measurement frameworks such as incrementality testing and MTA to move beyond siloed metrics and understand the full customer journey.
4. **Retailer Collaboration:** Working closely with RMNs to design bundled solutions and leverage their first-party data insights can help uncover hidden synergies and optimize campaign performance.
5. **Long Term Brand Health:** Understanding and leveraging cross-channel influence not only enhances short-term conversions but also contributes to longer-term brand metrics such as awareness, NPS, and customer lifetime value (CLV).

IV. ETHICAL CONSIDERATIONS

As Retail Media Networks grow in sophistication and data intensity, ethical considerations around consumer privacy, algorithmic transparency, and data governance have become ever more important. The harmonious use of multiple channels often involves extensive cross-channel tracking and behavioral profiling, raising several concerns:

A. Privacy and Consent: Many RMNs rely on first-party data collected during online shopping activity. While this data is typically more privacy-compliant than third-party cookies, ethical implementation still requires clear consent messaging and user understanding. When data from different touchpoints is integrated to create composite consumer profiles, ensuring transparency in how data is collected and used becomes crucial [11].

B. Bias and Algorithmic Fairness: Media optimization algorithms may unintentionally reinforce biases – such as preferential exposure based on geography, income level, or browsing history. This can create uneven consumer experiences and, in some cases, discriminatory targeting. Brands and RMNs must check these algorithms regularly for fairness and representation. Ensuring fairness in training data and building ethical frameworks to tackle bias is of utmost important [12].

C. Brand Safety and Content Alignment: Cross-channel synergy often involves third-party content platforms (e.g., influencers, CTV apps). Ensuring that advertising does not appear alongside inappropriate or misaligned content is an ethical imperative, particularly when the ad experience flows from one channel to another.

D. Consumer Autonomy and Overexposure: Repeated exposure across channels, while effective for performance, can also fall under the umbrella of manipulation if not frequency-capped or thoughtfully sequenced. Ethical marketing respects consumer autonomy and avoids exploiting behavioral science techniques purely to drive conversion.

E. Data Ownership and Retailer Responsibility: RMNs sit at the intersection of advertiser goals and consumer trust. As stewards of consumer data, retailers bear responsibility not just for compliance, but also for ensuring that their media practices align with broader societal expectations regarding fairness, privacy, and accountability.

F. AI Powered Recommendations: Retail Media increasingly relies on artificial intelligence to deliver personalized ads and product recommendations across channels to tap into the potential of network effects. While this enhances user experience and boosts conversion rates, it also raises concerns around transparency, autonomy, and fairness. Algorithms that optimize for engagement or revenue may inadvertently prioritize products with higher profit margins or popularity, sidelining ethical or healthier alternatives. Moreover, lack of transparency in recommendation systems may lead to consumer manipulation, where users are bumped toward purchases not in their best interest. To mitigate these risks, RMNs must impose algorithmic transparency, allow users to understand and control personalization settings, and conduct regular audits to ensure fair and responsible AI deployment.

Ethical retail media practices must balance performance optimization with long-term trust. By embedding ethics into measurement frameworks, audience segmentation, and creative design, RMNs and advertisers alike can drive sustainable marketing growth.

V. DISCUSSION OF CONTRIBUTIONS

This research builds on prior literature by offering the following advancements:**Practical Internal Data Integration:** While much of the existing RMN literature is either conceptual or reliant on third-party data, this research leverages internal reports from platforms like Instacart and Amazon Ads, offering real-world performance metrics that are not widely available or peer-reviewed in public literature. This gives the findings practical credibility and insight into actual campaign performance.

A. Focus on Full-Funnel Impact: Most prior studies focus narrowly on ROAS or conversion. This paper extends this by evaluating full-funnel metrics, such as awareness, engagement, and consideration, offering a holistic view of RMN effectiveness that reflects how marketers increasingly measure media success.

B. Comparative Analysis with Traditional Media:

The research draws a direct comparison between RMNs and traditional media (TV, print, radio), verified with newer industry data (2022–2024), highlighting higher efficiency and audience targeting capabilities of RMNs.

C. Critical Reflection on Source Reliability:

The inclusion of a transparent methodological note stating that some findings are derived from internal reports and not peer-reviewed sets a new standard for research integrity and interpretability in the emerging RMN field.

VI. RESULTS

The findings strongly support the presence of a network effect across Retail Media Network (RMN) channels. Case studies show that combining upper-funnel and lower-funnel tactics, such as streaming TV with sponsored search, improves performance metrics like ROAS, CTR, and conversion rates. For instance, Walmart Connect campaigns combining display and search achieved 1.4x higher ROAS, while Instacart observed a 22% uplift in conversions from cross-channel strategies. Empirical evidence from both industry and academia confirms that awareness investments amplify bottom-funnel outcomes. These results validate that coordinated, full-funnel approaches consistently outperform siloed media efforts in retail advertising.

VII. CONCLUSION

Retail Media Networks often treat marketing channels separately, which overlooks how they work together and reduces the overall impact of marketing strategies. This paper has demonstrated that network effects are not only real but also measurable and actionable. When advertisers adopt a holistic mindset and utilize advanced measurement techniques, they unlock the full value of their media investments. All major retailers have shown better engagement and conversion due to ad exposure through different channels – Amazon saw 25% increase in search engagement and 15% increase in conversion, Walmart achieved 40% higher RoAS, 22% more customers converted on Instacart while Target saw a 30% higher last-click conversion rates.

By recognizing how awareness, consideration, and conversion tactics interact, brands can orchestrate campaigns that mimic actual consumer behavior - non-linear, cross-platform, and touchpoint-rich. Retailers also need to improve their Retail Media Network offerings by creating more integrated packages and better ways to measure results that match how things really work.

Future research should aim to improve machine learning models for attribution, use real-time feedback, and more clearly measure brand impact over time. Working together on shared

standards for cross-channel measurement and media categories would also help make things more transparent and easier to compare.

Ultimately, the future of retail media lies in breaking down silos - between teams, tactics, and tools, and embracing the networked nature of modern media channels. Those who understand and materialize these effects will be best positioned to drive superior outcomes in a complex digital economy.

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