

# SaleSeeker: A Centralized Web-Based Platform for Discovering Brand Discounts and Transparent Advertising Revenue Distribution

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## Abstract:

The rapid expansion of e-commerce and digital marketing has fundamentally transformed how brands engage with consumers. However, the contemporary digital advertising ecosystem remains highly fragmented and opaque, often prioritizing platform revenue while offering limited direct benefits to users and third-party developers. This paper presents an exhaustive analysis of SaleSeeker, an implemented web-based platform designed to democratize online advertising through a transparent, centralized deal discovery and revenue-sharing ecosystem. SaleSeeker connects brands, developers, and users by aggregating promotional offers, filtering them for validity, and presenting them through a targeted, user-friendly interface. A defining innovation of the platform is its revenue distribution architecture, which ensures that a portion of the advertising revenue generated from user transactions is distributed to the developers hosting or supporting the advertisements. This paper delineates the system's architecture, underlying methodology, and implementation details, demonstrating its practical utility in resolving data freshness and offer validation challenges. Furthermore, it evaluates the qualitative results of the platform's deployment, addressing critical challenges such as data privacy, brand onboarding, user trust, and system scalability. By bridging the gap between effective brand promotion and fair stakeholder compensation, SaleSeeker establishes a sustainable, balanced paradigm for modern digital advertising.

*Keywords — digital advertising; deal discovery; web platform; revenue sharing; targeted marketing; e-commerce platform; consumer engagement; data freshness; transparent ecosystem.*

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## I. INTRODUCTION

The advent of digital technology and the subsequent proliferation of e-commerce have catalyzed a profound paradigm shift within the advertising industry [1]. Businesses are increasingly pivoting away from traditional, broad-spectrum advertising methodologies in favor of digital platforms that emphasize targeted marketing, data-driven personalization, and

sustained user engagement [2]. As global consumers allocate an unprecedented amount of their daily routines to online environments, brands are perpetually compelled to discover innovative and effective channels to capture audience attention and expand their market reach [1]. The transition toward a digital-first economy necessitates the continuous evolution of promotional strategies, moving beyond mere product visibility to foster genuine interactive

experiences [5]. In this highly dynamic digital environment, platforms that function as intermediaries connecting brands, developers, and users assume a critical role in shaping the architecture of modern advertising [1].

Despite the sophisticated targeting capabilities of contemporary ad networks, the dominant market models suffer from significant structural limitations. Specifically, the majority of centralized advertising systems operate under opaque revenue models that disproportionately favor platform owners and large-scale advertisers, often sidelining the developers who integrate these advertisements and the users whose data and attention fuel the ecosystem [1]. This imbalance has precipitated a growing demand for a centralized system that aligns the incentives of all participants, thereby creating a more balanced, sustainable, and equitable advertising ecosystem. The deal discovery problem further exacerbates this issue; consumers are routinely inundated with fragmented promotional codes across disparate websites, many of which suffer from severe data freshness issues, leading to consumer frustration and brand dilution [8].

SaleSeeker was conceptualized and implemented to explicitly support this evolving digital environment and solve the dual challenges of fragmented deal discovery and inequitable advertising models. It functions as a centralized, web-based platform where brands can effectively promote their products and services while directly connecting with their target demographic [1]. The platform enables companies to showcase their promotional offers and expand their market reach through streamlined online advertising. Crucially, the foundational differentiator of the SaleSeeker system is its simple and transparent revenue distribution model [1]. Within this implemented framework, brands advertise their products on the platform; when transactions or designated interactions occur within the application, a portion of the generated advertising revenue is distributed

to the developers who host or support the advertisements [1].

This ecosystem is designed to be mutually beneficial. Brands secure enhanced visibility and higher returns on investment (ROI) by targeting an audience exhibiting high purchase intent. Developers receive fair and transparent compensation for their infrastructural support, incentivizing the creation of high-quality digital environments. Users benefit from a centralized hub offering curated products, personalized recommendations, and exclusive promotional discounts, entirely mitigating the friction of cross-site deal hunting [1]. Through this tripartite approach, SaleSeeker seeks to forge a more efficient, transparent, and collaborative digital advertising environment [1].

The primary objective of this research paper is to provide a comprehensive architectural and methodological study of the SaleSeeker platform as a fully realized system. The subsequent sections explore the literature surrounding digital advertising and deal aggregation, detail the system overview and methodology, dissect the implemented system architecture, and provide a critical discussion of the platform's real-world utility, current limitations, and future scope.

## II. LITERATURE REVIEW

The evolution of digital advertising is deeply intertwined with the broader trajectory of e-commerce and information systems [10]. To contextualize the contributions of the SaleSeeker platform, it is necessary to examine the existing literature across four critical domains: digital advertising platforms, deal aggregation systems, targeted marketing concepts, and the prevailing gaps in revenue transparency.

### A. Existing Digital Advertising Platforms

The rapid growth of the internet has birthed a multitude of online platforms designed to assist brands in promoting their products to a global audience [1]. Literature extensively documents the

transition from traditional mass-media marketing to highly personalized digital environments, wherein advertising is intricately woven into the consumer's digital journey [13]. Platforms currently dominate the digital landscape by enabling businesses to reach customers across disparate websites, mobile applications, and social media channels [1]. As internet penetration reaches ubiquity, digital advertising has solidified its position as an indispensable tool for enhancing brand visibility and driving consumer acquisition [1]. Current advertising networks connect advertisers with digital content providers, allowing brands to display ads across a fragmented array of digital real estate while tracking campaign performance through real-time analytics [1].

However, the overwhelming volume of digital advertisements often leads to consumer fatigue, necessitating platforms that provide genuine utility rather than mere intrusion [3]. The increasing reliance on programmatic advertising has transformed digital marketing into an automated ecosystem governed by vast datasets and complex routing algorithms, but this transformation frequently reproduces the core tensions of digital capitalism, including the contradictions between precision and privacy, and efficiency and ethics [16].

### ***B. Deal Aggregation Systems***

In response to the sheer volume of e-commerce options, deal aggregation systems have emerged as critical navigational tools for consumers. Aggregation platforms collect information from a wide array of sources and add value through post-aggregation services such as categorization, searchability, and filtering [18]. Within the context of e-commerce, the fragmentation of promotional offers across thousands of independent brand websites poses a significant friction point for users [8]. Consumers often lack the time or inclination to visit multiple storefronts to identify the most competitive discounts. Web-based deal discovery

platforms solve this by centralizing promotional data [1].

However, maintaining data freshness—ensuring that expired deals are rapidly removed and new deals are accurately represented—remains a persistent technical challenge in aggregation architectures [1]. Traditional aggregators often rely on rudimentary web-scraping methodologies that are prone to latency and high error rates, leading to user frustration when confronted with invalid offers [9]. The literature indicates that the transition from generalized search engines to specialized, centralized discovery platforms drastically improves the efficiency of academic, commercial, and retail searches by providing structured, validated data sets [22].

### ***C. Targeted Marketing Concepts***

Contemporary advertising systems rely heavily on targeted marketing paradigms. Brands analyze vast troves of consumer data to reach specific demographic groups based on interests, browsing history, and online behavior [1]. Personalized advertisements and interactive platforms are critical levers for increasing customer engagement and optimizing the efficacy of marketing campaigns [25]. By delivering highly relevant content to the user, targeted marketing reduces ad wastage and improves conversion rates. The application of sophisticated data processing allows organizations to deploy real-time learning and decision-making capabilities, anticipating consumer preferences and refining content delivery strategies [27].

However, the aggressive pursuit of targeting has raised significant consumer privacy concerns, highlighting a delicate balance between personalization and intrusiveness [15]. Platforms that succeed in this space must leverage targeted marketing strictly within the bounds of transparent data usage, providing users with curated content without violating trust [29]. Furthermore, transparent ethical marketing practices have been empirically shown to create deeper consumer trust,

suggesting that digital brands must develop credibility through open communication to foster enduring relationships [30].

**D. Research Gap: Lack of Integrated, Transparent, User-Benefiting Platforms**

While technological advancements in digital marketing are robust, a critical gap exists in the economic structuring of these platforms. A vast majority of existing advertising networks operate on business models that optimize exclusively for brand promotion and platform-centric revenue generation [1]. In these traditional models, the third-party developers who integrate and host these advertisements, as well as the users who generate the actionable data, are systematically excluded from the revenue cycle or compensated through opaque, highly asymmetric terms [1]. The literature reveals a consensus that the digital advertising sector suffers from opacity in budget allocation across intermediaries, and that traditional wholesale buying models are increasingly outdated in a sphere demanding precision and verified engagement [7].

This creates a compelling need for more inclusive, collaborative platforms [1]. SaleSeeker addresses this explicit research gap by introducing a system that intrinsically links targeted advertising with a transparent, equitable revenue-sharing model that compensates developers and provides genuine utility to users, thereby creating a sustainable digital advertising environment [1].

**III. SYSTEM OVERVIEW**

SaleSeeker is explicitly designed as a comprehensive, web-based digital platform that integrates deal discovery with a targeted advertising network. At its core, the system replaces the fragmented, multi-site hunt for promotional discounts with a unified, centralized repository [1]. The architecture of SaleSeeker is built around a tripartite stakeholder model, ensuring that the platform delivers distinct, measurable value to users, brands, and the

platform/developer ecosystem. The platform fundamentally operates as an intermediary, lowering search costs for consumers while simultaneously lowering customer acquisition costs for participating brands.

**A. Stakeholder Model**

The platform ecosystem relies on the synchronized interaction of three primary stakeholder groups, each deriving specific utility from the system's centralized architecture. Table I summarizes these stakeholder roles and their corresponding value propositions within the SaleSeeker ecosystem.

**TABLE I. Stakeholder Roles and Value Propositions**

Stakeholder Group	Role within Ecosystem	Primary Value Proposition
Users	Consumers actively seeking promotional discounts and curated shopping experiences.	Frictionless deal discovery, guaranteed offer validity, personalized recommendations, and a centralized shopping interface.
Brands	Advertisers seeking to promote products, increase visibility, and drive sales conversions.	Access to a high-intent audience, targeted advertising capabilities, real-time analytics, and measurable return on investment (ROI).
Developers	Infrastructure providers and web developers hosting or supporting the digital ad spaces.	Transparent compensation through a revenue-sharing model based on actual user transactions and engagements.

Users (Consumers) utilize the platform to easily locate brand discounts, promotional codes, and exclusive deals without the friction of navigating multiple individual e-commerce websites [1]. The system provides users with curated product catalogs, personalized deal recommendations based on their browsing parameters, and the assurance that all displayed offers are valid and current [1]. Brands (Advertisers) engage with SaleSeeker as a highly targeted marketing channel. The platform allows businesses to showcase their products effectively, expanding their market reach to an audience actively exhibiting purchase intent [1]. Brands can deploy advertisements, sponsor specific

promotional listings, and utilize the platform's real-time analytics to track user interactions and measure campaign ROI [1]. Platform and Developers operate the infrastructure that bridges users and brands, and are fairly compensated through the transparent revenue distribution model [1].

### ***B. Core Features***

The implemented system provides several core features that differentiate it from passive web directories. Deal Discovery serves as the primary entry point for user engagement, functioning as a centralized hub aggregating offers from disparate digital marketing channels and brand partnerships [1]. The Filtering capability offers robust query mechanisms allowing users to dissect the database by brand name, product category, discount percentage, and price range, facilitating rapid assessment of available promotions [1]. Offer Validity is maintained through automated processing routines that actively monitor and purge expired deals, ensuring high data fidelity and eliminating the consumer frustration associated with invalid promotional codes [1]. Advertising Integration enables seamless blending of organic deal discovery with sponsored brand promotions and targeted advertising slots, supported by comprehensive interaction-tracking mechanisms to calculate engagement and revenue distribution [1].

## **IV. METHODOLOGY**

The methodology underpinning SaleSeeker describes the actual computational and procedural pipeline required to maintain a real-time, highly accurate web platform for deal aggregation. The system relies on a sequential data pipeline: Collection, Processing, Categorization, Storage, Retrieval, Display, and User Interaction Tracking [1]. This pipeline is engineered to minimize latency and maximize the accuracy of the promotional data presented to the end user.

### ***A. Data Collection and Processing***

The primary ingestion phase involves gathering promotional offers and discount metrics. Unlike platforms that rely solely on unpredictable web scraping, SaleSeeker acquires its data through structured brand partnerships, official promotional updates, and established digital marketing channels [1]. Brands submit their promotional parameters—including the specific product, the depth of the discount, and the exact temporal window of validity—directly into the SaleSeeker pipeline, bypassing traditional bottlenecks associated with unstructured data parsing. Data freshness is a critical heuristic for usability in deal aggregation [8]. The system executes rigorous data processing to ensure accuracy and currency [1]. Incoming data streams are sanitized, formatting inconsistencies are resolved, and continuous temporal validation checks are run. Expired promotional offers are systematically identified and removed from the active display index, while new deals are continuously appended [1].

### ***B. Categorization and Storage***

Once processed, the data requires meticulous organization to facilitate rapid and intuitive search capabilities. Offers are categorized across multiple standardized dimensions, notably: Brand Name, identifying the originating merchant; Product Type, segmenting deals into broad retail sectors such as electronics, apparel, and home goods; Discount Percentage, quantifying the value of the deal and enabling sorting mechanisms that prioritize the highest available savings; and Validity Period, recording the exact start and end timestamps of the promotion [1]. This structured categorization forms the backbone of the platform's search functionality. The categorized data is committed to the platform's centralized database, designed to handle high volumes of read requests while maintaining the transactional integrity required for accurate revenue sharing and interaction logging [1]. A centralized model ensures that all users experience a consistent, synchronized view of available promotions.

**C. Retrieval, Display, and Interaction Tracking**

The retrieval mechanism is tightly coupled with the search and filtering engines. When a user inputs a search query or selects a filter combination, the backend executes an optimized query against the centralized database, retrieving the matching, currently valid offers [1]. The retrieval logic is tuned to prioritize relevance and discount depth, ensuring the highest value propositions are presented prominently. Retrieved data is exposed to the user via a simple, user-friendly website interface [1]. The frontend dynamically renders search results using standardized deal cards that display the essential information of an offer concisely, emphasizing clarity to minimize visual clutter [37].

The final and most structurally unique methodological step is interaction tracking. The system continuously monitors how users engage with displayed deals and sponsored advertisements [1]. When a user clicks through a promotional link or when an in-platform transaction is recorded, the system logs this event. This telemetry data serves a dual purpose: it feeds into real-time analytics dashboards provided to advertising brands, and it triggers the revenue-sharing logic—the system calculates the advertising revenue generated by the specific interaction and allocates the predefined percentage to the developer account associated with hosting that specific ad space [1].

**V. SYSTEM ARCHITECTURE**

The architecture of SaleSeeker follows a robust, centralized web application model, completely eschewing speculative or overly complex distributed computing constructs in favor of a reliable, highly controllable centralized stack [1]. The architecture is logically divided into three primary layers: the Frontend (UI/UX), the Backend (API and Logic), and the Database. This separation of concerns allows for efficient scaling, maintenance, and secure data handling. Table II provides a structured overview of each architectural layer.

**TABLE II. Architectural Layers and Responsibilities**

Architectural Layer	Core Components	Primary Responsibilities
Frontend (UI/UX)	Search Dashboard, Dynamic Sidebar, Deal Cards, Advertiser Portal.	Rendering the user interface, capturing user inputs, displaying retrieved deals, and providing visual analytics dashboards for brands.
Backend (API, Logic)	Ingestion API, Validation Engine, Revenue Management Module, Recommendation Engine.	Processing incoming data, executing temporal validity checks, calculating revenue distributions, and routing search queries.
Database	Centralized Relational Schema (Users, Brands, Offers, Developers, Telemetry).	Persisting all platform data, maintaining transactional integrity, and supporting high-velocity read/write operations.

**A. Frontend (UI/UX)**

The frontend of SaleSeeker is built as a responsive, web-based user interface [1]. The primary design philosophy is simplicity and user-friendliness, recognizing that the platform's utility hinges on reducing the effort required for comparison shopping [1]. The UI consists of several key modules. The Search and Discovery Dashboard provides a central search bar and categorical navigation menu. A Dynamic Filtering Sidebar offers interactive toggles and sliders that permit users to refine their search by specific parameters [1]. The deals are presented in standardized Deal Cards that prominently display the brand logo, product image, discount magnitude, and a clear call-to-action. Furthermore, the frontend includes a separate, secure Advertiser Portal for brand partners to upload new promotions, manage active campaigns, and view real-time performance analytics [1].

**B. Backend (API, Logic)**

The backend operates as the central processing unit of SaleSeeker, handling business logic, data validation, and secure communication [1]. The Ingestion API provides endpoints designed to securely receive structured promotional data from

partnered brands. A critical component is the Validation Engine, a scheduled processing module that continuously scans the database for offers where the current system time exceeds the validity period timestamp, executing automated removals to purge them from the active frontend view [1]. The Revenue Management Module acts as the logic controller that processes telemetry from user clicks; it aggregates engagement metrics, calculates the requisite advertising revenue, and updates the ledger balances for the respective developers according to the transparent distribution model [1]. A centralized Recommendation Engine analyzes historical user interaction behavior to curate personalized deal displays, significantly enhancing overall user engagement [1].

### **C. Database**

All platform data is securely persisted in a centralized database [1]. This architectural choice ensures strong consistency across the platform, which is paramount for managing highly time-sensitive promotional data and accurate financial tracking. The database maintains highly normalized tables representing the core entities of the ecosystem. The Users table stores encrypted credentials, demographic data, and preference profiles. The Brands table houses company profiles, billing information, and campaign metadata. The core repository is the Offers table, containing the brand ID, product details, discount metrics, and expiration timestamps [1]. Additional tables manage Developer accounts for revenue distribution and Telemetry logs, which record immutable logs of user clicks, conversions, and ad impressions utilized for both analytics and revenue calculations [1].

### **D. Data Flow Between Components**

The flow of data through these architectural components is highly deterministic and synchronous. A brand submits a promotional offer via the backend API, which validates the payload and writes it to the centralized database. A user

accesses the frontend, triggering a read request to the backend, which constructs a query against the database for valid, matching offers and returns a serialized response to the client. When the user interacts with an offer, a synchronous telemetry event is dispatched to the backend. The backend logs the interaction, updates the brand's analytics metrics, and concurrently calculates the developer's revenue share, appending the calculated value to the developer's account table [1]. This streamlined flow ensures real-time accuracy across the entire ecosystem.

## **VI. IMPLEMENTATION DETAILS**

The implementation of SaleSeeker prioritizes functional reliability, data security, and a frictionless user workflow. As a centralized web platform handling both consumer data and corporate advertising budgets, its deployment necessitates rigorous attention to infrastructure stability and secure data processing [1].

### **A. Technologies and Infrastructure**

The platform relies heavily on secure, modern web infrastructure to manage its sensitive operations. Given that SaleSeeker collects user information, including email addresses and browsing behavior, alongside confidential advertiser campaign data, robust security measures are foundational to the implementation [1]. The system is deployed on secure servers utilizing industry-standard encryption protocols to guard against cyber threats such as hacking, data breaches, and phishing attacks [1]. Furthermore, the platform utilizes cloud computing environments to provide the necessary elasticity to scale resources dynamically in response to traffic spikes. This ensures that the platform does not suffer from slow loading times or server crashes during high-volume shopping events [1]. The backend architecture strictly enforces efficient coding practices to maintain high throughput for the telemetry and validation engines, ensuring that

data processing overhead does not negatively impact the end-user experience [1].

### ***B. Functional Modules***

The implemented system comprises several distinct functional modules tailored to the unique requirements of the three primary stakeholder groups. The Consumer Module facilitates user onboarding, account creation, preference setting, and the core discovery functions including search, filtering, and the displaying of curated, validated offers. The Advertiser Module is a comprehensive suite offering targeted advertising setup, budget allocation, and a real-time analytics dashboard presenting key performance indicators regarding campaign reach and user engagement [1]. The Developer/Partner Module is a transparent, secure interface displaying accrued revenue shares based on ad hosting and user interactions, reinforcing the platform's commitment to fair and transparent compensation [1].

### ***C. User Workflow***

The consumer workflow is designed specifically to minimize friction and maximize the efficiency of deal discovery. The process follows a highly optimized linear progression. Browse: the user accesses the web interface and inputs a query or selects a broad categorical grouping. Filter: the user refines the initial results utilizing the dynamic filtering tools, narrowing the selection by specific brands, a minimum acceptable discount percentage, or a predefined price ceiling [1]. Select: the user selects a specific deal card. The system presents the full details of the offer, including the terms, exact discount magnitude, and expiration date, providing a system guarantee that the deal is currently valid [1]. Visit Store: the user clicks the primary call-to-action button. This action triggers the backend interaction log required for the revenue-sharing calculation, and the user is seamlessly redirected to the brand's specific product page or online store to complete the transaction [1].

## **VII. RESULTS AND DISCUSSION**

While the evaluation of the SaleSeeker platform focuses heavily on operational methodology and systemic integrity rather than isolated algorithmic benchmarks, the functional deployment of the system yields substantial qualitative results and observable benefits across its user base and stakeholder network [1].

### ***A. Functional Validation***

The primary functional achievement of SaleSeeker is the successful mitigation of the fragmented, unreliable deal discovery problem. By centralizing promotional offers and rigorously processing them to remove expired data, the platform drastically reduces the time and effort required by consumers to locate valid discounts [1]. The implementation of the continuous temporal validation check ensures that the user interface remains entirely free of "stale" promotions, an issue that severely plagues traditional coupon aggregators and diminishes consumer trust. This functional reliability directly enhances the user's shopping experience, shifting the paradigm from frustrating trial-and-error code testing on checkout pages to streamlined, reliable purchasing [1].

### ***B. System Performance and Usability***

The platform's reliance on scalable cloud computing infrastructure and efficient backend coding results in a highly stable system capable of managing large datasets and concurrent user activity [1]. In qualitative terms, the system demonstrates the necessary elasticity to maintain high uptime and low latency even during periods of increased user traffic. This stability is critical, as poor platform performance directly frustrates users and reduces the overall engagement metrics that brands rely upon to measure campaign success [1]. Usability is optimized through the simple web interface, which actively eschews complex navigation in favor of intuitive search and filtering mechanisms. By presenting curated products and personalized recommendations derived from user

interaction telemetry, the platform successfully maintains high levels of user engagement [1]. Users report a significantly higher degree of satisfaction when the cognitive burden of sifting through irrelevant or expired offers is removed by the system's automated processing layer [1].

**C. Observed Benefits for Brands and Developers**

For brand partners, the platform functionally validates its premise as an effective targeted advertising channel. By placing advertisements within an ecosystem populated entirely by users actively seeking to make purchases, brands observe improved marketing effectiveness and a measurably higher return on their advertising investments [1]. The provision of real-time analytics dashboards allows advertisers to adapt their campaigns dynamically based on actual engagement metrics, optimizing their marketing spend [1]. Simultaneously, the successful implementation of the transparent revenue-sharing model effectively alters the traditional, asymmetric dynamics of digital advertising [1]. Developers who host or integrate the platform's advertisements receive automated, proportional compensation based on genuine user interactions. This transparent economic distribution fosters a highly collaborative environment, providing empirical evidence that a centralized platform can successfully balance the financial interests of corporate advertisers with the compensation rights of independent developers [1].

**VIII. CHALLENGES**

The deployment and continuous operation of a multifaceted digital ecosystem like SaleSeeker present several ongoing operational and strategic challenges that must be actively managed to ensure long-term viability [1]. Table III summarizes these challenge domains alongside their descriptions and mitigation strategies.

**TABLE III. Operational Challenges and Mitigation Strategies**

Challenge Domain	Description	Mitigation Strategy
Data Privacy & Security	Protecting user data and proprietary campaign metrics from cyber threats, hacking, and unauthorized access.	Utilizing robust encryption (data at rest and in transit), secure server deployments, and enforcing clear privacy policies.
User Trust	Overcoming initial skepticism regarding the revenue-sharing model and ensuring sustained user engagement.	Maintaining absolute operational transparency, clear guidelines on revenue mechanics, and offering tangible, personalized rewards.
Brand Onboarding	Convincing established advertisers to allocate budgets to a new platform over entrenched ad networks.	Providing granular analytics dashboards, demonstrating highly targeted reach, and proving superior campaign ROI.
Scalability	Handling exponential increases in data volume, ad serving requests, and revenue calculations without performance degradation.	Implementing elastic cloud computing infrastructure, continuous query optimization, and regular technical maintenance.

**A. Data Freshness**

While the system's temporal validation protocol is robust, ensuring absolute data freshness remains an ongoing challenge. Promotional campaigns are often subject to sudden alterations by the issuing brand, such as early termination due to stock depletion. If the brand does not communicate this change to the platform in real-time, the system may temporarily display an invalid offer. Maintaining tight API integrations with brand partners to allow for synchronous updates is necessary to mitigate this latency and preserve the platform's reputation for reliability.

**B. User Trust and Brand Onboarding**

Introducing a novel economic model wherein advertising revenue is shared requires overcoming deep-seated initial user skepticism [1]. Consumers are habituated to traditional, extractive advertising models and may initially doubt the legitimacy of a platform that claims to distribute revenue

transparently. Without establishing deep trust, user acquisition and retention will stall [1]. To combat this, SaleSeeker must prioritize absolute transparency with clear guidelines detailing exactly how the system operates, how ads are displayed, and how revenue is calculated and shared [1]. The success of SaleSeeker's revenue model is entirely dependent on the influx of advertising capital from brand partners [1]. A significant challenge lies in convincing established, well-known brands to divert marketing budgets away from entrenched, monopolistic ad networks toward a newer platform [1]. Brands are highly risk-averse and demand measurable, verifiable results, requiring the platform to continuously demonstrate superior ROI through granular analytical tools [1].

### **C. Scalability**

As the platform successfully acquires more users, brands, and data, the technical strain on the architecture increases exponentially. The system must process an ever-growing volume of promotional data, serve dynamic advertisements, and calculate complex revenue-sharing metrics in real-time [1]. Poor architectural performance—manifesting as slow page loads, search latency, or server timeouts—directly degrades user engagement and trust [1]. Scalability is therefore a continuous challenge requiring regular technical maintenance, bug fixes, and optimization of database queries. Leveraging elastic cloud computing infrastructure is essential to ensure that the platform can scale resources dynamically to handle traffic surges without compromising stability [1].

## **IX. CONCLUSION AND FUTURE WORK**

SaleSeeker represents a highly innovative and practical intervention in the digital advertising landscape. By engineering a centralized web platform that seamlessly connects brands, developers, and users, the system establishes a mutually beneficial advertising ecosystem [1]. The

platform successfully addresses the consumer pain point of fragmented deal discovery by aggregating, validating, and presenting targeted promotional offers in a user-friendly interface. Concurrently, it revolutionizes the economic flow of digital marketing by instituting a transparent revenue-sharing model that fairly compensates the developers hosting the advertisements [1]. Through the fusion of targeted advertising, real-time analytics, and user engagement strategies, SaleSeeker demonstrates that a collaborative, transparent digital marketplace creates superior value for all participating stakeholders [1].

While the current implementation provides a robust operational foundation, the sustained success of the platform requires vigilant management of critical challenges, particularly concerning data security, infrastructure scalability, and the continuous cultivation of user and brand trust [1]. Looking forward, the architecture and functionality of SaleSeeker present numerous avenues for future expansion and research. Future work will focus on scaling the platform to encompass a broader array of product categories, including fashion, home appliances, groceries, and cosmetics, thereby increasing its utility as a comprehensive, everyday shopping hub [1]. Additionally, there is significant scope for enhancing the platform's recommendation engine by integrating more advanced data analytics to deliver hyper-personalized advertisements based on highly granular user interest profiles, improving conversion rates [1]. To align with shifting consumer behavior, developing a dedicated mobile application will be prioritized to improve platform accessibility and user convenience [1]. Finally, deeper technical integration directly into third-party e-commerce services through localized APIs will further streamline the user journey from deal discovery to final transaction, solidifying SaleSeeker's position as a highly efficient, transparent, and indispensable digital advertising platform [1].

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