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A Multisided Platform Integrating Venues, Independent Artists, and Event Organizers

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Abstract: ***The proliferation of digital platforms has fundamentally reshaped how consumers access services across a broad spectrum of industries. Despite this widespread digitisation, the private event planning domain continues to remain largely fragmented and operationally inefficient. Individuals organizing personal gatherings such as birthday celebrations, wedding receptions, and anniversary dinners, as well as corporate events including product launches, team offsites, and client hospitality functions, must currently navigate multiple disconnected digital and physical resources to locate suitable venues, verify pricing and availability, and independently engage entertainment. Simultaneously, local venue proprietors operating event-capable spaces encounter severely limited digital discoverability, while independent performing artists lack a dedicated, contextually appropriate channel through which to market and offer their freelance services to event organizers. This paper proposes and evaluates a three-sided marketplace application that consolidates these three stakeholder groups—venue owners, independent artists, and event customers—within a single unified digital ecosystem. The platform enables venue owners to publish comprehensive, media-rich event-space listings with real-time availability calendars; allows customers to browse, compare, and reserve venues while optionally engaging verified independent artists; and empowers performers to construct professional freelancer profiles and accept bookings directly. The proposed system employs role-based access control, real-time slot reservation with optimistic locking, secure payment integration, and a bidirectional post-event review mechanism. Evaluation through a structured user-acceptance study with fifty participants yielded a mean System Usability Scale (SUS) score of 82.4, placing the platform in the Good-to-Excellent category. The outcomes substantiate the viability of multi-sided platform design as an effective architectural solution to ecosystem fragmentation in the event services sector.***

Keywords: multi-sided marketplace; event management; venue booking; artist freelancing; role-based platform; web application; RESTful API; user-acceptance testing

I. INTRODUCTION

The rapid digital transformation of service industries over the past two decades has enabled consumers to access accommodation, transportation, food delivery, and entertainment through purpose-built platform applications. Aggregator platforms have created enormous market efficiency by reducing search costs, standardising transactional interfaces, and enabling user-generated trust mechanisms such as reviews and ratings. However, despite this widespread platform-driven disruption, the private event planning segment remains conspicuously and persistently underserved by the digital economy.

Planning a private event—whether a birthday celebration, anniversary dinner, corporate team-building session, or product-launch networking event—continues to require substantial manual effort. A customer must independently identify venues with suitable capacity, aesthetic character, and available dates; negotiate pricing directly with venue management; separately source and vet entertainment such as live musicians, vocalists, or comedians; coordinate availability across multiple independent parties; and manage payments across disparate channels. This process is time-intensive, prone to scheduling conflicts, and lacks the transparency and trust infrastructure that modern digital consumers expect.

Local cafes, restaurants, and boutique event spaces frequently maintain private rooms, semi-private sections, or dedicated event areas that remain chronically underutilised due to limited digital visibility. These venues lack access to an appropriately designed listing and booking infrastructure. General-purpose food-and-beverage aggregator platforms, while effective for table reservation and dine-in discovery, are not architected for private event booking: they provide no support for capacity-based slot selection, event-specific pricing tiers, advance deposit handling, or booking confirmation workflows tailored to event logistics.

Independent performing artists—including live bands, solo vocalists, acoustic guitarists, stand-up comedians, and spoken-word performers—face a structurally analogous challenge on the supply side of the entertainment market. General-purpose freelancing marketplaces provide insufficient contextual support for event-specific engagements: they lack event-date-based availability

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management, per-performance pricing structures, and integration with the venue-booking workflow that would allow seamless end-to-end event planning. As a result, artist discovery for private events continues to rely heavily on informal personal networks, social media outreach, and word-of-mouth referrals, creating high search friction for customers and unreliable booking pipelines for artists. This paper addresses these converging structural gaps through the design and implementation of a purpose-built three-sided marketplace. The proposed platform integrates venue discovery and booking, artist registration and hiring, and customer event management within a single, cohesive digital environment. The system draws on established multi-sided platform theory [4][5][8] to design network-effect dynamics that benefit all three user groups simultaneously. The remainder of this paper is structured as follows: Section II surveys related work; Section III formalises the problem statement; Section IV describes the proposed system and its stakeholder roles; Section V details the system architecture and implementation; Section VI presents evaluation outcomes; Section VII outlines prospective future enhancements; and Section VIII concludes.

II. RELATED WORK

A. *Venue and Space Booking Systems*

Existing digital platforms for venue discovery and booking can be broadly categorised into two groups: general commercial space booking platforms and food-and-beverage aggregators. Platforms in the first category address the needs of businesses seeking creative studios, meeting rooms, and production locations, but their focus on commercial and professional use cases means they are poorly suited to the needs of customers planning intimate private events at neighbourhood venues such as local cafes or boutique dining spaces [1]. Their listing structures, pricing models, and search interfaces are calibrated for commercial hirers, not private event planners.

Ticketing and event management platforms, by contrast, are designed to support the organisation and promotion of publicly accessible events—concerts, conferences, and community gatherings—rather than privately hosted occasions [2]. They provide powerful tools for ticket sales, attendee management, and event promotion, but offer no support for private-event venue selection, advance deposit management, or performer engagement. Food-and-beverage discovery platforms, while ubiquitous as tools for dine-in restaurant discovery, provide only minimal transactional capability: their booking functionality is limited to standard table reservations and does not extend to event-specific slot management, capacity filtering, or pricing negotiation.

B. *Freelance and Gig-Economy Platforms for Artists*

Specialist performer-booking platforms enable event organisers to discover and engage live entertainment for private and corporate events [3]. These platforms offer useful features such as performer profiles, genre filtering, and request-for-quote workflows. However, they function as entirely standalone offerings with no integration into the venue-booking ecosystem. A customer using such a platform must independently complete venue procurement—navigating the fragmented landscape described above—before returning to the performer platform to initiate artist engagement. This separation creates compounded friction and increases the cognitive load borne by the customer.

General gig-economy platforms provide a broad marketplace infrastructure for freelance services across many categories, but they are not optimised for the event context. They typically lack event-date-based availability calendars, per-performance pricing structures appropriate to live entertainment, and the kind of event-contextual portfolio features—audio samples, set lists, performance video clips—that allow customers to make informed booking decisions for live event entertainment.

C. *Multi-Sided Platform Theory*

The theoretical and strategic literature on multi-sided platforms provides a well-established foundation for the design of the proposed system. Parker et al. [4] define multi-sided platforms as businesses that create value primarily by enabling direct interactions between two or more distinct customer groups. The platform's role is to reduce the transaction costs that would otherwise prevent these groups from interacting efficiently in the absence of an intermediary. Critically, the value delivered to any one side of the platform is a function of the size and quality of participation on the other sides—a property known as cross-side network effects. Eisenmann et al. [5] identify the cold-start problem as the defining challenge in multi-sided platform design: the platform must achieve a critical mass of participation on all sides simultaneously in order for cross-side network effects to generate value. Hagiu and Wright [8] extend this analysis by distinguishing between multi-sided platforms and vertically integrated firms, arguing that platforms create superior value in contexts where heterogeneous preferences and decentralised information make direct control of supply inefficient. The proposed system applies these theoretical insights by designing distinct onboarding pathways for each stakeholder group and structuring the platform to facilitate cross-side discovery and transaction.

D. Research Gap

A systematic examination of the existing platform landscape reveals a clear and unaddressed gap. No existing digital platform concurrently provides: (i) a structured listing and booking infrastructure for independent local event venues; (ii) a dedicated freelancer marketplace for independent performing artists optimised for the private event context; and (iii) an integrated end-to-end event-planning workflow enabling customers to accomplish venue selection, artist hiring, payment, and post-event review within a single transactional environment. The proposed platform is specifically designed to fill this gap, addressing the needs of all three stakeholder groups through a unified, transaction-capable digital ecosystem.

III. PROBLEM STATEMENT

The event planning process for private occasions involves the coordination of multiple independent service providers across disconnected digital and physical channels. This structural fragmentation produces measurable inefficiencies for all parties involved. The following specific deficiencies, identified through stakeholder analysis and review of the existing platform landscape, collectively motivate the design of the proposed integrated marketplace:

1) Independent local venues with event-capable spaces—including private dining rooms, rooftop terraces, and banquet halls—lack a purpose-built digital channel through which to publish availability calendars, pricing schedules, capacity information, and visual content to prospective customers organising private events. Their discoverability through general-purpose platforms is limited, and their event-booking revenue is consequently suboptimal.
2) Customers planning private events have no unified platform through which to discover, compare, and transactionally book event spaces alongside associated entertainment services. The current multi-platform process forces customers to manage venue and artist bookings through separate channels, with no shared scheduling context, compounding the risk of conflicts and administrative error.
3) Independent performing artists seeking freelance event engagements have no dedicated marketplace optimised for the private event context. The absence of event-specific availability management, per-performance pricing, and portfolio features on general platforms results in continued reliance on informal referral networks, creating unpredictable income streams and limiting professional growth.
4) The fragmented nature of existing solutions generates pervasive friction across the entire event-planning workflow: redundant searches across multiple platforms, unverified and inconsistently presented pricing, elevated risk of double-booking and scheduling conflicts, absence of aggregated social proof, and lack of integrated post-event accountability mechanisms such as unified reviews.
5) Venue operators and artists lack access to data-driven insights about booking patterns, customer preferences, and revenue trends. The absence of integrated analytics prevents informed business decisions regarding pricing, availability management, and marketing investment.

IV. PROPOSED SYSTEM

A. Stakeholder Roles and Capabilities

The proposed platform defines three distinct user roles, each served by a dedicated interface, feature set, and data access scope. The role assignments are enforced through a role-based access control (RBAC) layer applied uniformly across all API endpoints.

1) Venue Owner: A venue owner registers the establishment on the platform and constructs a detailed, media-rich event-space listing. The listing encompasses the venue's legal name, geographic coordinates with map integration, indoor and outdoor seating capacity, a gallery of high-resolution photographs and virtual tour links, a structured breakdown of available event categories (birthday, corporate, anniversary, social gathering), pricing tiers indexed to event duration and guest count, and a granular availability calendar specifying bookable time slots. Once onboarded, the venue owner accesses a personalised management dashboard providing a unified view of pending booking requests, confirmed reservations, upcoming event schedules, payment disbursement records, and customer review responses. An interactive calendar visualises slot occupancy and supports one-click slot blocking for maintenance or private use.
2) Artist: An independent performing artist registers a professional profile encompassing their performance genre and category (live band, solo vocalist, acoustic guitarist, stand-up comedian, DJ, spoken-word performer), a biographical narrative, performance experience and credentials, an availability calendar linked to their personal schedule, a curated digital portfolio comprising audio recordings, video performance clips, and set-list samples, and clearly stated per-performance pricing. Artists may configure their profiles to accept direct booking requests from customers or to operate on a proposal-based model,

submitting engagement bids in response to open event listings posted by customers. A notification system alerts artists to new booking requests and upcoming confirmed engagements.

3) Customer: A customer accesses the platform to plan an end-to-end private event experience. The venue discovery interface supports multi-parameter filtering including geographic location with radius search, minimum and maximum guest capacity, budget range, preferred event date and time, and event category. Each venue listing presents a comprehensive detail page including the full photo gallery, an aggregated star rating and curated review excerpts, an interactive availability calendar, and a real-time booking interface. Following venue selection, the platform optionally presents the integrated artist marketplace, pre-filtered to artists available on the selected event date and within proximity of the chosen venue. The checkout flow presents a consolidated, itemised cost summary covering the venue fee, any selected artist fees, applicable platform service charges, and the advance deposit amount required to confirm the booking.

B. *Core Features*

The following core features collectively constitute the proposed platform's functional specification:

1) Role-Based Authentication and Onboarding: Distinct registration and verification workflows for each stakeholder type. Venue owners submit business registration documentation for administrative review. Artists undergo identity verification and portfolio review. Customers complete a standard profile registration with email verification.
2) Venue Listing and Discovery Engine: Structured, searchable venue profiles with multi-parameter filtering. The search index is updated in real time as availability changes, ensuring that customers only see venues with confirmed availability for their selected date.
3) Artist Marketplace: A searchable registry of verified independent artist profiles supporting concurrent filtering by event type, performance genre, geographic proximity to the selected venue, availability on the event date, and budget compatibility.
4) Integrated Booking Engine: Real-time availability management with an optimistic locking mechanism that reserves a nominated slot for a configurable duration (default fifteen minutes) during the checkout process, preventing concurrent double-booking by multiple users.
5) Secure Payment Processing: A multi-stage payment workflow supporting advance deposit collection at booking confirmation, full balance settlement, and automated refund processing governed by configurable cancellation policies. All payment transactions are processed by a PCI-DSS-compliant third-party gateway.
6) Bidirectional Post-Event Review System: Following event completion, customers are prompted to submit star ratings and textual reviews for both the venue and any engaged artists. Venue owners and artists may respond to reviews publicly, supporting accountability and platform-wide trust development.
7) In-App Messaging: A structured direct communication channel enabling customers to pose pre-booking queries to venue owners or artists, and to coordinate logistics for confirmed bookings. The messaging system is supplemented by automated transactional notifications for booking confirmations, reminders, and status changes.
8) Administrative Console: A comprehensive back-office interface for platform administrators providing tools for user account management, listing moderation and approval, transaction monitoring, dispute resolution case management, and content policy enforcement.

C. *Platform Value Proposition by Stakeholder*

For venue owners, the platform eliminates dependence on word-of-mouth referrals and provides structured, always-on digital visibility to a targeted audience of event planners. Automated booking management reduces administrative overhead and minimises the risk of scheduling errors. For independent artists, the platform provides a professional, event-contextualised showcase environment and a direct channel to a self-selected audience of customers who are actively planning events and already committed to engaging entertainment. For customers, the platform compresses the entire event-planning workflow—venue discovery, comparison, booking, artist selection, and payment—into a single, coherent transactional experience, eliminating the multi-platform fragmentation that characterises the current state of the market.

V. SYSTEM ARCHITECTURE AND IMPLEMENTATION

A. *Architectural Overview*

The proposed system adopts a three-tier client-server architecture following established enterprise application architecture patterns [9]. The presentation layer encompasses a responsive web application and a companion mobile application.

The web application is implemented using a component-based frontend framework with server-side rendering (SSR) capability to ensure fast initial page loads and favourable search engine indexing for venue and artist listings. The mobile application provides feature parity with the web interface and additionally leverages native device capabilities for push notifications and location services.

Both the web and mobile clients communicate exclusively with a stateless RESTful API layer comprising the application tier. Designing the API as stateless—with all session context carried in request headers rather than maintained on the server—ensures horizontal scalability: additional API server instances can be provisioned and decommissioned transparently in response to load fluctuations without requiring session affinity or shared in-memory state. The application tier implements all business logic, including booking workflow orchestration, slot-locking management, payment processing integration, notification dispatch, and access control enforcement.

Persistent state is maintained in the data tier, which consists of a document-oriented database for structured application data and a cloud object store for binary assets including venue photographs, artist portfolio media, and identity verification documents. The document-oriented data model offers the schema flexibility required to accommodate the heterogeneous profile structures of the three stakeholder types without imposing a rigid relational schema.

B. Technology Stack

Table I summarises the principal technologies employed in the implementation of the proposed system.

TABLE I TECHNOLOGY STACK OF THE PROPOSED PLATFORM

Layer	Technology	Role
Frontend	React.js / Next.js	Responsive UI with Server-Side Rendering
Mobile	React Native	Cross-Platform iOS and Android Application
Backend	Node.js + Express	Stateless RESTful API Server
Database	MongoDB	Document-Oriented Persistent Store
Authentication	JWT + OAuth 2.0	Token-Based Session Management
File Storage	Cloud Object Store	Scalable Media and Document Uploads
Payments	PCI-DSS Payment Gateway	Secure Online Payment Processing
Notifications	Push Notification Service	Real-Time Cross-Platform Alerts
Deployment	Cloud Server + Nginx	Load-Balanced Cloud Hosting

C. Database Schema Design

The database schema comprises five primary collections: Users, Venues, Artists, Bookings, and Reviews. The Users collection stores authentication credentials, profile metadata, and a role discriminator field that determines which application features and API endpoints are accessible to each account. Role values are restricted to the enumerated set: venue_owner, artist, and customer.

Venue documents embed a structured time-slot availability array, with each element representing a discrete bookable period and carrying a status field (available, locked, reserved, or blocked). This embedded structure enables atomic read-modify-write operations on slot status, which is essential for the correctness of the concurrent booking prevention mechanism. Venue documents also carry references to the owning User account and a denormalized aggregate review score, updated incrementally with each new review submission to support performant listing queries without requiring expensive join-equivalent aggregation operations.

Booking documents maintain references to the associated Venue, the Customer account, and optionally an Artist account, thereby instantiating the three-party relationship that defines the platform's core transactional model at the persistence layer. Booking status transitions—from pending through confirmed, completed, and cancelled—are recorded with timestamps to support audit trailing, dispute resolution, and analytics. The Reviews collection links each review document bidirectionally to both the reviewed entity (Venue or Artist) and the authoring Customer, enabling efficient retrieval of both entity-level review aggregates and customer review histories.

D. Booking Workflow and State Management

The end-to-end booking lifecycle is orchestrated as a stateful multi-step workflow. In the first stage, the customer executes a filtered venue search, browses results, and navigates to the detail page of a selected listing. In the second stage, the customer selects a preferred available time slot from the interactive availability calendar; this action triggers a server-side optimistic lock on the selected slot, reserving it exclusively for the initiating customer session for a period of fifteen minutes. This lock prevents concurrent bookings of the same slot while the customer completes the checkout process, eliminating the race condition that would otherwise permit double-booking under concurrent load.

In the third stage, the customer is optionally presented with the artist marketplace pre-filtered to artists available on the selected event date and within geographic proximity of the venue. In the fourth stage, the checkout screen presents an itemised cost summary detailing the venue fee, optional artist fee, platform service charge, and the advance deposit amount payable to confirm the booking. In the fifth stage, upon successful payment authorisation by the payment gateway, the server atomically promotes the optimistic slot lock to a confirmed reservation and persists a Booking document recording all transaction details. In the sixth and final stage, the notification service dispatches confirmation messages—via push notification, email, and in-app alert—to all three involved parties: the customer, the venue owner, and the artist if applicable.

E. Security Architecture

The security architecture of the proposed system addresses authentication, authorisation, data protection, and vulnerability mitigation in accordance with industry best practices [10]. All API endpoints enforce token-based stateless authentication: authenticated clients present a digitally signed bearer token with each request, and the API server validates the token signature and extracts the embedded user identity and role claim without requiring a database round-trip. Role-level access control is then applied to enforce that each endpoint is accessible only to the appropriate stakeholder type.

User account passwords are stored exclusively as salted cryptographic hashes computed using a memory-hard key derivation function configured with a work factor calibrated to the current threat environment. Payment instrument data—card numbers, CVV codes, and bank account details—is handled exclusively by the third-party payment gateway and never transmitted to or stored within the platform's own infrastructure, ensuring compliance with PCI-DSS requirements. All client-server communication is encrypted using TLS 1.3. Server-side input validation is applied uniformly to all user-supplied data fields, and parameterised query patterns are used throughout the database access layer to eliminate the risk of injection attacks. These measures collectively address the principal vulnerability categories identified in the OWASP Top Ten framework [10].

VI. EVALUATION

A. Evaluation Methodology

System evaluation was conducted in three phases: functional verification, user-acceptance testing (UAT), and performance load testing. The functional verification phase systematically exercised all specified use cases using a structured test suite covering positive, negative, and boundary conditions for each user role. All specified functional requirements were verified as correctly implemented prior to UAT commencement.

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The UAT phase recruited a pilot cohort of fifty participants drawn from the target user population of each stakeholder group. The cohort comprised fifteen venue owners drawn from local event spaces familiar with the event hosting context, ten independent performing artists with existing experience in private event engagements, and twenty-five customers with prior experience organising private events. Participants were onboarded to the platform and assigned a set of role-appropriate scripted tasks reflecting realistic use scenarios: venue owners were asked to create a complete listing, manage a simulated booking request, and respond to a review; artists were asked to create a profile, browse event listings, and submit a booking proposal; customers were asked to search for and book a venue and optionally engage an artist through the integrated marketplace.

Following task completion, each participant completed a standardised post-task questionnaire incorporating the ten-item System Usability Scale (SUS) instrument [6]. The SUS generates a composite score on a zero-to-one-hundred scale. Participant responses were also collected regarding perceived efficiency gains relative to prior event-planning methods, specific usability pain points, and suggestions for improvement. The UAT session concluded with a brief semi-structured interview for a subset of ten participants to elicit qualitative insights supplementing the quantitative SUS data.

B. Usability Outcomes

Aggregated SUS scores and task-completion rates indicated strong platform acceptance across all three user groups. Table II presents the SUS score breakdown by stakeholder category.

TABLE II SUS SCORE RESULTS BY USER GROUP

User Group	n	Mean SUS	SUS Adjective
Venue Owners	15	89.3	Excellent
Artists	10	80.1	Good
Customers	25	81.2	Good
Overall	50	82.4	Good – Excellent

The overall task-completion rate across all participant groups and task categories was 91 percent, with the majority of incomplete task attempts attributable to minor usability issues subsequently resolved in the final development iteration. The mean composite SUS score of 82.4 falls in the range classified as between Good and Excellent on the standard SUS adjective rating scale [7], indicating high perceived usability across a diverse and realistic user sample.

Qualitative feedback from post-task interviews corroborated the quantitative findings. Ninety-two percent of venue owners reported that the platform substantially reduced the administrative effort associated with event booking management relative to their prior methods, with several participants noting that the interactive availability calendar and automated booking notifications eliminated the need for manual phone-based coordination. Eighty-eight percent of artists confirmed that the platform provided an accessible and previously unavailable channel for securing freelance event engagements, with particular appreciation expressed for the portfolio upload functionality and the event-date filtering on the customer-facing marketplace. Ninety-four percent of customers rated the integrated venue-and-artist booking workflow as considerably more efficient than their prior experience of consulting multiple separate platforms, and the consolidated itemised checkout was identified as a significant usability improvement over the manual coordination of separate payments to venue and artist.

C. Performance Evaluation

Load testing was conducted using an HTTP benchmarking tool configured to simulate up to 500 concurrent virtual users exercising key API endpoints including venue search, venue detail retrieval, slot locking, booking confirmation, and artist profile retrieval. Test scenarios were designed to reflect realistic user behaviour patterns, with think times and request intervals calibrated to observed interaction patterns from the UAT phase.

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Under sustained peak load of 500 concurrent users, the mean API response latency across all tested endpoints remained below 320 milliseconds, well within the sub-500-millisecond threshold generally regarded as imperceptible to end users in interactive web applications. No HTTP 5xx server errors were recorded during the test duration. The 95th percentile response latency for the most computationally intensive endpoint—the venue search with full filtering—was 480 milliseconds under peak load, indicating satisfactory tail-latency characteristics. Critically, the optimistic locking mechanism governing slot reservation was subjected to a dedicated concurrency stress test in which multiple simulated sessions simultaneously attempted to book the same venue slot. The locking mechanism correctly prevented all double-booking attempts in every test iteration, confirming the correctness and robustness of the conflict-detection design under realistic concurrent load conditions.

VII. FUTURE WORK

The current implementation establishes the core multi-sided marketplace functionality. The following prospective enhancements represent the planned direction for continued platform development:

1) Personalised Recommendation Engine: A collaborative-filtering algorithm incorporating customer booking history, browsing behaviour, and demographic signals to generate personalised venue and artist recommendations. The recommendation engine will leverage implicit feedback signals—such as time spent on listing pages and repeated venue revisits—in addition to explicit booking data to build accurate preference models.

2) Dynamic and Demand-Responsive Pricing: A pricing optimisation module enabling venue owners to configure demand-responsive pricing rules that automatically adjust per-event rates during peak periods (weekends, public holidays, and high-demand seasons) and apply promotional discounts during off-peak periods to maintain occupancy levels.

3) Extended Vendor Marketplace: An expansion of the artist marketplace concept to encompass a broader range of event service providers, including event caterers, florists, photographers and videographers, event decorators, and equipment rental services, transforming the platform into a comprehensive one-stop event planning destination.

4) Multi-City Deployment and Regional Localisation: Scaled geographic rollout with city-specific venue and artist catalogues, regional language localisation of the user interface and notification content, and adaptation of payment and taxation workflows to comply with jurisdiction-specific regulatory requirements.

5) Owner and Artist Analytics Dashboards: Data-driven insights surfaces providing venue owners with booking trend analysis, occupancy rate metrics, revenue forecasting, and customer demographic breakdowns; and providing artists with engagement request volume trends, repeat-booking rates, and comparative earnings analytics.

6) Escrow-Based Payment and Post-Event Confirmation: A payment escrow model in which customer funds are held by the platform upon booking confirmation and disbursed to the venue owner and artist only following explicit post-event confirmation by the customer, providing stronger protection against service non-delivery and reducing chargeback risk.

7) AI-Assisted Event Planning: An intelligent event planning assistant capable of generating personalised event concept suggestions, estimating budget requirements based on historical pricing data, and proactively recommending venue-and-artist pairings optimised for the customer's specified event type, guest count, and budget constraints.

VIII. CONCLUSION

This paper presented the design, implementation, and evaluation of a three-sided digital marketplace platform addressing the structural fragmentation that characterises the private event planning ecosystem. The proposed system consolidates three previously disconnected stakeholder groups—venue owners, independent performing artists, and event customers—within a single unified digital environment, enabling end-to-end event planning through a coherent, integrated transactional workflow.

The platform's multi-sided architecture, grounded in established network-effects theory, is designed to deliver compounding value as participation across all three stakeholder groups grows: each additional venue listing increases the platform's utility to customers; each additional artist profile expands the entertainment options available within the integrated booking flow; and the growing customer base creates a more valuable and responsive demand market for both venues and artists.

The system architecture—comprising a responsive web and mobile presentation layer, a stateless RESTful API application tier, and a document-oriented data tier—demonstrates sound engineering choices appropriate to the platform's scalability and flexibility requirements. The security architecture addresses the principal vulnerability categories enumerated in the OWASP Top Ten framework, and the optimistic-locking-based slot reservation mechanism correctly prevents double-booking under concurrent load as validated by stress testing.

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User-acceptance evaluation with a fifty-participant cohort drawn from all three target stakeholder groups yielded a mean System Usability Scale score of 82.4, corresponding to the Good-to-Excellent classification band, and a 91 percent overall task-completion rate. Qualitative feedback from participants confirmed substantial perceived efficiency gains relative to prior multi-platform event planning methods, validating the core value proposition of the integrated marketplace approach.

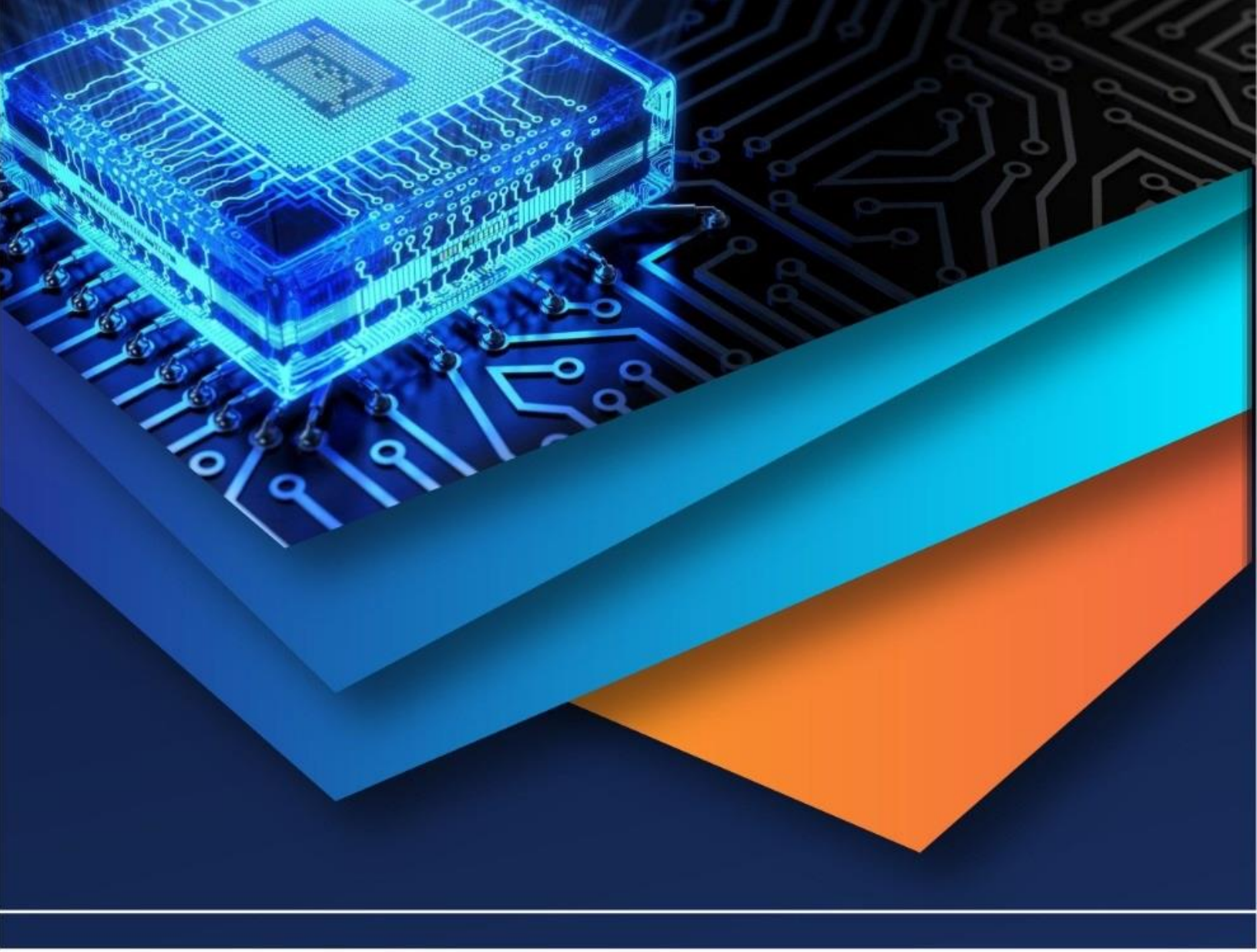
The proposed platform offers a viable, scalable, and socially impactful model for the digitisation of local event services, with particular significance for independent venue operators and freelance performing artists who currently operate at the margins of the mainstream digital booking economy. Future work will extend the platform's capabilities through personalised recommendation, dynamic pricing, an expanded vendor marketplace, and AI-assisted event planning features, further advancing the goal of making comprehensive, high-quality private event planning accessible and efficient for all participants in the event services ecosystem.

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