



## Thikana: An AI-Powered SaaS Platform for Local Business Growth and Consumer Engagement

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### ABSTRACT :

Local businesses face challenges in establishing an online presence, engaging customers, and competing with large e-commerce platforms. Thikana is an AI-powered SaaS platform that provides business verification, e-commerce tools, and AI-driven marketing solutions to bridge this gap. The platform integrates Next.js, Firebase, and AI/ML models to enable real-time interactions, personalized recommendations, and secure transactions. AI is leveraged for chatbots, content generation, and post recommendations, enhancing automation and user engagement. Using a hybrid SDLC approach combining Waterfall and Agile, Thikana ensures structured development with iterative enhancements. This paper presents the architecture, key features, and technological advancements used in Thikana, highlighting its impact on business scalability, consumer engagement, and digital transformation.

**Keywords:** SaaS, AI, Business Verification, E-commerce, Consumer Engagement, Web Development, Digital Marketplace, Chatbot, AI Content Generation, AI Recommendations

### 1. Introduction :

The digital marketplace is highly competitive, making it difficult for small and local businesses to establish a strong online presence. Traditional e-commerce platforms often require technical expertise and significant investment, leaving many businesses unable to adapt. Furthermore, fragmented digital tools force business owners to juggle multiple services for marketing, customer engagement, and payment processing, increasing complexity and inefficiency. Consumers also face challenges in discovering trustworthy businesses and finding personalized recommendations suited to their needs. Thikana addresses these challenges by integrating **business verification, AI-powered marketing, and e-commerce tools** into a single, scalable SaaS platform. It enables businesses to **verify authenticity, build online stores, automate content generation, and engage with customers through AI-driven interactions**. Consumers benefit from **AI-based personalized recommendations, location-based business discovery, and a seamless shopping experience**. The platform leverages a **hybrid SDLC approach**, combining structured planning with Agile-driven iterative improvements to ensure scalability, efficiency, and adaptability. This paper explores the architecture, implementation, and impact of Thikana in transforming digital business operations.

### 2. System Architecture :

Thikana follows a **modular, service-oriented architecture** to ensure scalability and maintainability.

#### Frontend Layer

- **Next.js** for server-side rendering and dynamic UI updates.
- **ShadCN UI & Sass** for responsive and interactive designs.
- **Leaflet.js & Google Maps API** for location-based business discovery.

#### 2.2 Backend Layer

- **Node.js & Firebase** for real-time data synchronization and cloud-based database management.
- **AI/ML Integration (Gemini AI)** for chatbots, content generation, and personalized recommendations.

- **Razorpay API** for secure payment transactions.
- **Twilio & Resend** for communication services.

### 2.3 Deployment & Scalability

- **Vercel & Render** for cloud-based deployment and performance optimization.
- **PWA (Progressive Web App)** support for cross-platform accessibility.

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## 3. Methodology :

Thikana was developed using a **hybrid SDLC approach**, combining Waterfall for structured planning and Agile for iterative improvements.

### 3.1 Planning & Design

- Conducted **market research** to identify business needs.
- Designed UI/UX prototypes using **Figma**.
- Created a modular **system architecture** with API-based integration.

### 3.2 Development

- Implement business authentication, AI-based recommendations, and geolocation-based business discovery.
- Integrated e-commerce features like website building (Grapes.js), marketing tools, and analytics.

### 3.3 Testing

- **Cypress automation testing** for functional validation.
- **User acceptance testing (UAT)** to refine UI/UX.
- **Performance testing** to ensure scalability and speed.

### 3.4 Deployment & Post-Launch Support

- Initial deployment using Vercel (frontend) and Render (backend).
- Continuous monitoring for security patches, updates, and new features.

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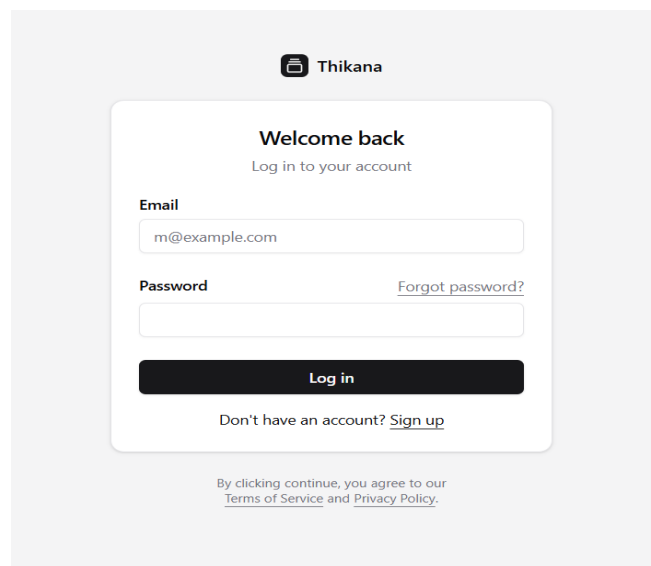
## 4. Results & Discussion :

Thikana successfully enhances **business discoverability, consumer trust, and digital engagement**.

- **Business Adoption:** Verified businesses experienced **increased customer interactions** and improved marketing efficiency.
- **Consumer Satisfaction:** AI-driven recommendations enhanced **user retention and purchase decisions**.
- **Performance & Scalability:** Server-side rendering in **Next.js** reduced **latency** and improved **loading times**.
- **Security & Compliance:** Implemented **secure authentication, encrypted transactions, and GDPR-compliant data handling**.

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## 5. Output :



Thikana. Home Pricing Contact Us **Get Started**

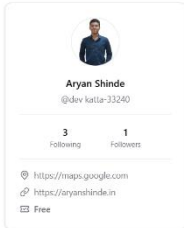
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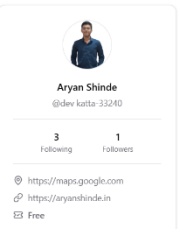
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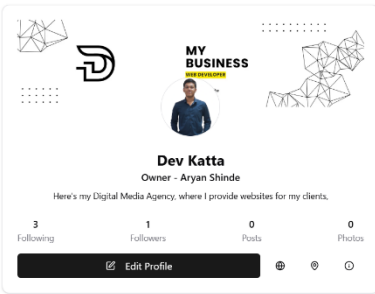
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**MY BUSINESS**



**Dev Katta**  
Owner - Aryan Shinde

Here's my Digital Media Agency, where I provide websites for my clients.

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**Chat with Thikana AI** ✕

**Hi**

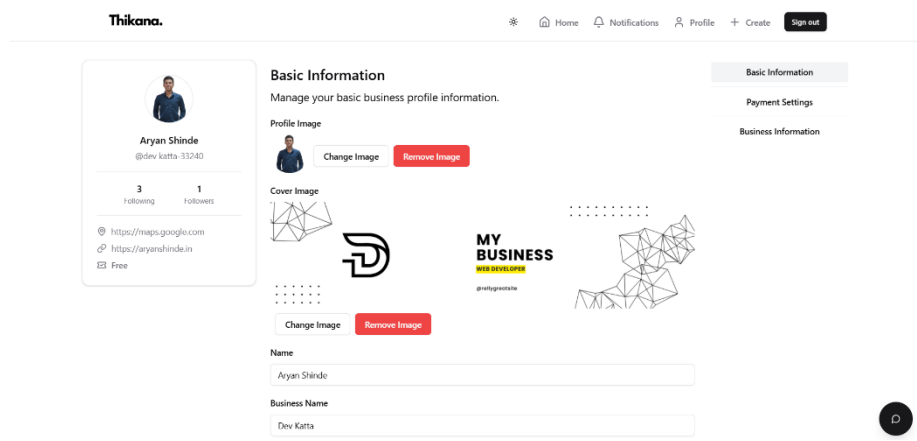
Hello! How can I help you today? Are you interested in learning more about using Thikana as a customer or registering your business?

**Tell me more**

More about what specifically? Are you interested in Thikana for personal use, or are you a business owner looking to join our platform? Perhaps you'd like to know

**Tell me more** **Show options** **Contact support**

Type your message here... →



## 6. Conclusion & Future Scope :

Thikana provides a **scalable, AI-driven solution** for local businesses to establish a digital presence and engage with consumers effectively. Future developments will focus on:

- **Advanced AI integrations** (voice-enabled search, predictive analytics).
- **Blockchain-based business verification** for enhanced security.
- **Expanding to new markets** with multi-language support and cross-border commerce features.

## REFERENCES :

1. Kotler, P., & Keller, K. L. (2016). *Marketing Management* (15th ed.). Pearson.
2. Russell, S., & Norvig, P. (2020). *Artificial Intelligence: A Modern Approach* (4th ed.). Pearson.
3. Schneier, B. (2015). *Data and Goliath: The Hidden Battles to Collect Your Data and Control Your World*. W. W. Norton & Company.
4. Chaffey, D., & Ellis-Chadwick, F. (2019). *Digital Marketing: Strategy, Implementation, and Practice* (7th ed.). Pearson.
5. Ries, E. (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. Crown Business.