PRODUCT REQUIREMENTS DOCUMENT (PRD) – ShopWizz.ai

Version: MVP v1.2 – Global Internet Search Last Updated: May 29, 2025 Source of Truth: This PRD plus the accompanying README.md. Any conflicts shall be resolved in favor of the README.

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1. OVERVIEW ShopWizz.ai is a fully-responsive, AI-powered shopping assistant that lets users discover, filter, and purchase products from across the internet through a conversational interface (text, voice, image). It combines GPT-4 for intent extraction, ElevenLabs for speech, SerpAPI for real-time product data, and Supabase for authentication, Edge Functions, and persistent storage. Revenue is earned exclusively through affiliate links embedded in every returned product.
2. TARGET USERS • Primary: General online shoppers on mobile, tablet, or desktop – need fast, accurate product discovery without hopping between retailer sites. • Secondary (future): Merchants, support agents, and super-admins – need self-service dashboards, analytics, and user management (post-MVP).
3. GOALS & SUCCESS CRITERIA (MVP) • Responsive UI seamlessly adapts to mobile, tablet, and desktop. • End-to-end flow: text/voice/image → AI parsing → global product results → affiliate link out. • Filters persist per anonymous session (localStorage) and per registered user (Supabase). • Optional signup that never blocks core search capability. • 100 % affiliate tagging on all outbound product URLs for revenue tracking.

KPIs – ≤ 2 s initial content load on 4 G. – ≥ 95 % successful AI → product-result conversions. – < 0.5 % API error rate in Edge Functions.

4. OUT OF SCOPE (MVP) • Shopping cart, checkout, or payment processing. • Native mobile apps, merchant portals, loyalty programs, or social sharing.
5. KEY FEATURES
6. Conversational Chat – Multimodal input (text ≤ 500 chars, voice ≤ 30 s, image ≤ 10 MB). GPT-4 returns structured JSON intent.
7. Advanced Filters – Price, brand, rating, review count, shipping speed, pickup availability; collapsible on < 768 px screens.
8. Responsive Product Grid – Cards show image, price, brand, AI star rating, 100-char "Why buy" blurb, and full-width purple "Buy Now" button.
9. Voice & Image Search – ElevenLabs STT/TTS; image tags extracted by GPT-4 before SerpAPI call.
10. Persistent State – Anonymous state in localStorage; registered state synced to Supabase (preferences, searchHistory).
11. Affiliate Revenue – All product links include program-specific tags; disclosure banner in footer.
12. Edge Functions – chat/, productSearch.ts, aiProductSummary.ts – secured by JWT, rate-limited, and OWASP-compliant.

13. PRIMARY USER FLOW Landing Page → Shop → AI parses intent → Edge Function productSearch → Product Grid + Filters → Product Detail → Buy Now (affiliate site). State automatically restores when users navigate back to /shop.
14. TECH STACK & ARCHITECTURE • Frontend: Next.js (App Router), React, TypeScript, Tailwind CSS – Responsive SPA & UI styling. • Backend: Supabase (Auth, Postgres, Edge Functions) – Auth, persistence, secure serverless logic. • AI Services: OpenAI GPT-4; ElevenLabs STT/TTS – Intent parsing, summaries; speech in/out. • Product Data: SerpAPI (Google Shopping) – Real-time, normalized product catalog. • Testing: Jest, React Testing Library – Unit & integration tests with ≥ 80 % coverage. • Hosting: Vercel (frontend); Supabase (backend) – CI/CD, edge deployment.
15. CORE FUNCTIONAL REQUIREMENTS 8.1 Authentication & Session – Anonymous by default; optional email/password signup (Supabase). – Verification email and forgot-password flows. – JWT stored in localStorage; renew ≤ 60 min. – Signup banner: "Save your searches? [Sign up]".

8.2 Chat & Input Module – Accepts textPrompt, voiceBlob, or imageFile. – Validates non-empty input; file ≤ 10 MB. – Emits searchQuery (unparsed).

8.3 AI Processing Module – GPT-4 converts searchQuery into parsedQuery JSON. – ElevenLabs transcribes voice and returns TTS audio of chatbot reply. – Fallback: show text if audio fails.

8.4 Global Product Lookup Module – SerpAPI called with keywords, image tags, and filters. – Returns productItems[] (title, imageUrl, price, brand, reviewCount, avgRating, affiliateUrl, sourceDomain). – Filters out items with missing price or image.

8.5 Results Display Module – Grid (desktop/tablet) or vertical list (mobile). – Infinite scroll loading 10–20 items per batch. – "Buy Now" opens affiliateUrl in new tab.

8.6 Voice Chat Module – Floating panel with play/pause, mute, close. – Respects OS mute switch; autoplay disabled unless user gesture present.

8.7 Persistent State – usePersistentState React hook hydrates from localStorage or Supabase on page load. – Sync debounce = 500 ms to limit writes.

8.8 Revenue & Monetization – Affiliate tag appended server-side in productSearch.ts. – Footer disclosure: "As an Amazon/affiliate partner, we earn from qualifying purchases." – Click-throughs tracked via Supabase linkClicks table.

9. NON-FUNCTIONAL REQUIREMENTS Security – OWASP Top-10 compliance; HTTPS everywhere; input sanitized on server and client; Supabase RLS for multitenancy.

Performance – TTI ≤ 2 s on 4 G; Edge Functions cold-start ≤ 400 ms; API debounced 500 ms.

Accessibility – WCAG 2.1 AA; 44-px touch targets; aria-labels for all interactive elements.

Scalability – Horizontal scaling via Vercel edge; Postgres indexes on users.id, searchHistory→keywords.

Testing – ≥ 80 % unit/integration coverage; CI gates on Jest & RTL.

Logging – Structured JSON logs (Edge Functions); client errors piped to Sentry.

10. GUARDRAILS FOR AI & DEVELOPERS • Do NOT change any variable or schema names without approval. • Clarify ambiguous requirements before coding. • No placeholder logic unless explicitly marked // TODO. • Preserve component order and naming from folder structure. • Enforce DRY principles; isolate side-effects in hooks / Edge Functions.
11. FUTURE ROADMAP (POST-MVP)
12. Admin Panel with role-based access, affiliate tag management, and analytics.
13. OAuth (Google, Apple) signup.
14. Personalization: fine-tuned GPT profile per user.
15. Native Mobile Apps using Expo + React Native.

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