UI/UX - P.I. - Price Intelligence

Subject: Price Intelligence AI (P.I.) - PRD

1. Introduction
The Price Intelligence AI (P.I.) app empowers individuals and businesses to maximize profits and efficiency when selling items online. By combining AI-driven photo analysis,
highly accurate real-time price prediction, **intelligent marketplace recommendations considering profitability**, and automated listing content generation, P.I. streamlines the process of preparing and posting items for sale across major platforms like Google Shopping, eBay, Poshmark, Xtrader, Facebook Marketplace and more. The app will leverage AI provider flexibility and utilize the Tempo starter template with React, Vite, Supabase, and Stripe for robust, scalable, and modern web development, offering a seamless user experience.

2. Problem Statement
Selling items online is time-consuming and often confusing. Users struggle with accurately identifying items, determining
a truly competitive yet profitable market value, choosing the optimal marketplace **considering net profit after fees**, and crafting compelling listing descriptions. Manual research, price comparison, and content writing are inefficient, leading to inconsistent results, lost time, and potential lost revenue due to inaccurate pricing or suboptimal platform choice. There is a clear need for a simple, guided solution that integrates item identification, **reliable pricing intelligence**, **fee-aware marketplace recommendations**, and listing automation within a single, intuitive workflow.

3. Goals and Objectives

- **Accurate Item Identification:** Provide accurate, AI-powered valuation of secondhand items through photo analysis to help users maximize resale value. Use AI (leveraging user-selectable or dynamically chosen providers) to recognize items from user-uploaded photos.
- **Flexible AI Integration:** Offer options or backend logic to utilize various AI providers (Perplexity API, Qwen VS (Latest) API, Google Gemini Pro,

OpenRouter) for analysis tasks, balancing cost and performance.

- **Highly Accurate Price Prediction:** Provide reliable estimated price ranges based on item data, condition, and real-time market data. **Accuracy in price suggestion is paramount to user trust and success.**
- **Intelligent & Profitable Marketplace Recommendation:** Suggest the most suitable platforms for selling (Facebook Marketplace, eBay, Poshmark, Xtrader, etc.). **Crucially, this recommendation must factor in estimated seller fees, potential shipping cost variations, and platform-specific audience reach to guide users towards the most *profitable* listing location**, providing clear reasoning for the suggestion.
- **Automated Listing Content Generation:** Automatically generate tailored titles, descriptions, and relevant tags optimized for target marketplaces.
- **User Dashboard:** Enable users to track, and export their analyses (CSV/PDF).
- **Subscription Management & Free Trial:** Offer tiered subscription plans, track usage, manage payments via Stripe, and provide a free trial (e.g., 2 free product analyses) for new users.
- **Effortless Content Transfer:** Allow users to easily copy individual sections (name, condition, price, title, description, tags) to the clipboard for seamless use on external listing platforms.
- **Seamless User Experience (UX):** Ensure a clear, intuitive, responsive, and accessible interface across all devices (desktop, mobile).

4. User Stories

- As a new user, I want to understand the app's value proposition on the landing page, particularly its ability to provide **accurate pricing and profit-optimized marketplace suggestions**, and easily sign up for a free trial offering 2 analyses.
- As a seller, I want to upload photos of my item and choose between a quick analysis or a more comprehensive full analysis.
- As a user, I want to receive clear, actionable results including the identified item, its condition, a **highly accurate estimated price range**, and

recommended marketplaces **with an indication of potential net profit after estimated fees** for each suggested platform.

- As a user, I want the ability to copy individual result sections (like item name, condition, price estimate, generated title, description, tags) with a single copy button click.
- As a user, I want to save my past analyses to a personal dashboard where I can filter them by date, category, or marketplace, and export the data if needed.
- As a user, I want to easily view my current subscription plan, monitor my usage (including remaining free trial analyses), and have options to upgrade or manage my subscription.
- As an admin, I want tools to monitor overall user activity, manage subscription data, and potentially oversee AI provider usage/costs.

5. Technical Requirements

- **Frontend:**
  - Built with React and Vite, potentially using the Tempo starter template as a foundation.
  - Responsive and accessible UI optimized for desktop and mobile views.
  - Support for multiple image formats (JPG, PNG, HEIF)
  - Robust copy-to-clipboard functionality for all key result components.
  - User dashboard featuring filtering (date, category, marketplace) and export capabilities (CSV/PDF).
  - Subscription management page displaying plan options, current usage/limits (including free trial status), and seamless integration with Stripe for payment processing.
- **Backend:**
  - Secure user authentication and account management implemented via Supabase.
  - Reliable and secure storage for user uploads (photos), analysis results, and subscription data using Supabase database and storage solutions.

- **Integration with multiple Google Cloud AI Vision/LLM APIs:**
  - Image recognition capabilities. Item identification (category, brand, model when applicable)
  - Condition assessment based on visual cues
  - Feature/attribute detection (materials, size, color, etc.)
  - Core analysis and content generation powered by providers such as Perplexity API, Qwen VS (Latest) API, Google Gemini Pro, and OpenRouter. Implement logic for selecting or routing requests based on configuration, cost, or performance needs.
- **Integration with robust pricing intelligence sources/APIs:** Capable of fetching **accurate, real-time** data across the target Marketplace Scope (Google Shopping, Facebook Marketplace, eBay, Poshmark, Xtrader, etc.). Provide Low, medium, and high price range estimations based off of current / past listings by using Condition-based price adjustments.
- **Marketplace Fee Integration:** Requires integration with data sources or internal logic to maintain **up-to-date estimates of seller fees (listing fees, final value fees, payment processing fees)** for each supported marketplace. This fee data must be incorporated into the recommendation algorithm.
- Stripe integration for handling subscription payments, managing different plan tiers, tracking usage limits, and enforcing the free trial limit (2 analyses per user).
- Well-defined API endpoints for handling analysis requests, retrieving results (including fee considerations), managing user data, and facilitating data export.

- **AI & Data:**
  - Mechanism for differentiating and selecting or dynamically routing requests to different AI providers with appropriate prompts.
  - Data pipelines for processing image uploads and structuring analysis results.

- **Sophisticated logic for determining marketplace recommendations:** This logic must weigh factors like predicted sale price, **estimated seller fees**, item category suitability, platform audience, and potentially shipping cost implications to suggest the most profitable venue.

6. Other Considerations

- **Data Privacy & Security:** Strict adherence to privacy best practices for handling user photos, personal information, and analysis data.
- **Scalability:** Design the architecture to accommodate future growth in user base, feature additions, and potential integration of more marketplaces or AI providers.
- **Data Accuracy & Maintenance:** Establish processes for regularly validating the accuracy of price prediction models and **updating marketplace fee information** to ensure recommendations remain reliable.
- **Error Handling:** Implement comprehensive error handling and provide user-friendly notifications for issues related to analysis processing, API failures, data fetching (especially for pricing/fees), or payment problems.