**Shopping Advisor – Product Requirements Document (Merged & Final)**

**Version:** 2.0  
**Date:** 13 June 2025  
**Document Owner:** Shopping Advisor Product Team  
**Status:** Draft ‑ Ready for Cross‑Functional Review

**1. Executive Summary**

Shopping Advisor is a mobile (with complementary web) application that determines the *true* cost of grocery shopping by combining real‑time product prices with travel, time, and club‑membership costs. It recommends the cheapest single‑store or multi‑store strategy and learns user preferences to improve over time.  
**Key Proposition:** *“The cheapest cart isn’t always the best deal—Shopping Advisor shows the all‑in cost so you never overpay.”*

**2. Problem Statement**

1. **Membership ROI Uncertainty** – Shoppers pay warehouse fees (e.g., Costco) without knowing if they break even.
2. **Hidden Costs Ignored** – Gas, mileage depreciation, and the value of time are rarely factored into “cheap.”
3. **Multi‑Store Complexity** – Manually deciding if splitting a list across stores saves money is hard.
4. **Generic Lists vs. Specific Prices** – Lists say “milk”; stores price specific SKUs.

**3. Target Users & Personas**

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| **Persona** | **Profile** | **Goals** | **Pain Points** |
| **Budget‑Conscious Family Shopper** | Age 25‑45, suburban, HH income $40–80 k | Maximize monthly grocery savings | Unsure if membership fees pay off; complex price comparison |
| **Efficient Urban Professional** | Age 25‑40, urban, HH income $60–120 k | Minimize trips & wasted time | Limited time to scout prices; dislikes multiple stops |

**4. Product Goals & Success Metrics**

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| Goal | KPI | 6‑mo Target | 12‑mo Target |
| Increase user savings | Avg. $ saved per active user / mo | ≥ $40 | ≥ $50 |
| Drive engagement | WAU / MAU | ≥ 60 % | ≥ 65 % |
| Retain users | 3‑mo retention | ≥ 40 % | ≥ 50 % |
| Monetize ethically | ARR | $100 k | $500 k |

**5. Scope & Phasing**

**5.1 MVP (Priority 1 – Launch Market)**

1. **Smart List Creation**
   * Text, voice, and OCR (handwritten list) input.
   * Generic‑to‑SKU mapping with visible default + quick refinement.
2. **Price & Store Comparison**
   * Pull daily price feeds for ≥ 10 local stores.
   * Return top‑3 single‑store options with total *basket* cost.
3. **True‑Cost Calculator**
   * Gas (user MPG or average) + mileage wear + time value (user‑set hourly rate).
   * Membership fee amortization.
4. **Multi‑Store Optimizer**
   * Split across ≤ 3 stores only if savings ≥ $10 and time increase ≤ 20 min.
5. **Basic Profile & Preferences**
   * Vehicle, store distance limit, memberships, dietary/brand prefs.

**5.2 Phase 2 (Priority 2 – Months 6‑12)**

* Barcode & receipt scan → exact SKU & price history.
* Shared household lists & roles.
* Price‑drop / deal alerts.
* Membership break‑even dashboard.
* Dark‑mode & full accessibility.

**5.3 Phase 3 (Priority 3 – Year 2)**

* AI meal‑plan → auto‑list.
* Community price reporting & gamification.
* Carbon‑footprint tracking.
* Grocery‑delivery & loyalty‑card integrations.

**6. Detailed Requirements (MVP)**

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| # | Feature | User Story | Acceptance Criteria |
| 1 | **Smart List** | *As a user I can add 10 items in <60 s* | 90 % generic items map to correct SKU; voice works in noisy kitchen |
| 2 | **Store Comparison** | *As a user I see ranked stores with all‑in cost* | Result ≤ 10 s for 20‑item list; gas calc accurate ±$0.50 |
| 3 | **Multi‑Store Plan** | *As a user I get a clear itinerary showing extra time vs. savings* | Recommends split only when criteria met; includes route map |
| 4 | **Membership ROI** | *As a member I see if I’m on‑track to break even* | Dashboard shows monthly savings vs. fee; renewal reminder |
| 5 | **Data Privacy** | *My data is secure & deletable* | GDPR/CCPA compliant; data encrypted in transit & at rest |

**7. Technical Architecture (MVP)**

* **Frontend:** React Native mobile (iOS 14+, Android 10+) + Next.js web dashboard.
* **Backend:** GCP – Cloud Run microservices:
  + *User Service* (Firebase Auth, Firestore).
  + *Product Service* (PostgreSQL + price cache Redis).
  + *Optimization Engine* (Python FastAPI) – cost model & route solver.
* **Integrations:**
  + Price APIs / respectful scraping (daily).
  + Google Maps (distance, ETA).
  + GasBuddy (fuel price).
  + Veryfi OCR (receipts).
* **ML components:**
  + OCR & SKU linking (3rd‑party).
  + Collaborative filtering for “Your Usuals.”
* **Performance Budgets:**
  + App launch <3 s.
  + API 95th‑pct latency <700 ms.
  + <50 MB/mo cellular data.

**8. Security & Privacy**

* TLS 1.3 everywhere, AES‑256 at rest.
* Least‑privilege Firestore rules; automated security testing in CI.
* Data usage transparency modal on first launch; one‑tap export & delete.

**9. Revenue Model**

1. **Freemium** – Core free, Premium $4.99/mo (multi‑store optimizer, unlimited lists, analytics).
2. **Affiliate Fees** – Optional click‑through to partner store apps/sites.
3. **Premium Placement** – Paid slot for partner stores (clearly labeled, no impact on ranking logic).

**10. Go‑to‑Market Plan**

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| Phase | Geography | Key Activities |
| Beta (Months 5‑6) | Des Moines, IA | Recruit 100 families; partner 2 local chains; iterate weekly |
| Regional (6‑12) | 5 Midwest metros | Social & influencer campaigns; referral program |
| National (12‑24) | USA | Add major chains & delivery APIs; PR & finance‑blog features |

**11. Timeline & Milestones**

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| Mo | Milestone |
| 1 | Architecture complete, price‑feed POC |
| 2 | Core algorithm & Firestore schema |
| 3 | Mobile alpha with list & comparison |
| 4 | Closed beta go‑live |
| 6 | MVP public launch |
| 9 | Phase 2 feature set frozen |
| 12 | Multi‑market expansion |

**12. Risk & Mitigation**

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| Risk | Impact | Mitigation |
| Price data gaps | Wrong recommendations | Multi‑source + user flag & reward for corrections |
| API rate limits | Service disruption | Caching, back‑off, partner agreements |
| Low adoption | Miss targets | Aggressive referral, focus on clear $ savings |
| Privacy concerns | User churn, legal | Transparent policy, opt‑in analytics |

**13. Appendices**

* **A. Competitive Landscape** – Flipp, Ibotta, Basket, Honey comparison.
* **B. Detailed Cost Model Formulas** – Gas, depreciation, time valuation.
* **C. User Research Summary** – 30 interviews, key insights.
* **D. Financial Projections** – 24‑month ARR & CAC/LTV.

*End of Document*