Project x — AI Purchase Manager (Business Plan + Product Scope + Developer Execution Spec)

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AI Purchase Manager
Business Plan + Product Scope + Developer Execution Spec
UAE F&B; Procurement Marketplace with Inventory, Payments/Credit, and AI Autopilot
Prepared for: Product and Engineering Team
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Page 3 — 1. Problem and Opportunity

Restaurants today often run procurement and operations through fragmented channels (WhatsApp, calls, emails), which creates errors, delays, weak price transparency, and margin leakage.
Suppliers struggle with inconsistent order formats, slow confirmations, limited demand visibility, and payment friction.

AI Purchase Manager solves this by turning procurement into a controlled workflow and adding an AI layer that automates routine decisions while keeping humans in approval control.

Core pain points (restaurant side)

- Scattered supplier lists and manual ordering cause wrong items, missing items, and delays.
- Prices cannot be compared fairly because items differ by naming, unit, and pack size.
- Manual back-office work: LPOs, invoice matching, approvals, chasing deliveries.
- Inventory surprises (stockouts) and overbuying increase spoilage and waste.
- Limited visibility into waste, variance, recipe inefficiencies, and true food cost.

Core pain points (supplier side)

- Orders arrive through multiple channels, increasing mistakes and response time.
- No unified dashboard of sales, customers, route performance, and product trends.
- Inventory planning is difficult without demand forecasting.
- Payment delays and cashflow variability hurt SMEs.

2. Solution Overview (Closed-Loop Platform)

AI Purchase Manager is a full closed-loop operating system:
Discover → Compare → Order → Track → Receive → Invoice → Pay/Credit → Inventory depletion → Low stock → AI drafts next order → Manager approves → Waste insights → Forecast and planning

North Star outcome
Reduce kitchen and back-office workload while lowering food cost via autonomous purchasing and waste intelligence, without sacrificing control or compliance.

3. Target Users and Personas

Restaurant roles

- Owner/GM: approvals, cost control, supplier performance, visibility across branches
- Operations Manager: fast ordering, fewer mistakes, AI-prepared cart, delivery reliability
- Head Chef/Kitchen Manager: stock accuracy, prep planning, waste reduction, recipe optimization
- Receiver/Storekeeper: simple receiving (GRN), discrepancy claims, photo evidence
- Finance/AP: invoice matching, payment scheduling, audit trail, credit terms

Supplier roles

- Supplier Owner/GM: sales dashboards, forecasting, customer retention, cashflow visibility
- Sales Rep: manage quotes, promotions, follow-ups, account performance
- Dispatcher/Logistics: picking, routing, delivery proof, substitution handling
- Supplier Finance: invoicing, collections, credit status

4. Platform Scope and Modules

A) Marketplace and Supplier Discovery

- Supplier profiles (coverage, lead time, MOQ, payment terms, certifications/halal)
- Structured product catalogs (category, brand, grade, origin, pack size, unit)
- Search and filters; favorites and preferred suppliers
- RFQ to multiple suppliers and quote comparison (normalized unit cost)

B) Ordering, Tracking, and Receiving (GRN)

- Purchase order/LPO generation and approval routing
- Order status tracking (confirmed, dispatched, delivered)
- Receiving workflow (GRN): quantities, substitutions, quality notes, photos
- Discrepancy and claim workflow; delivery proof (signature/photo)

C) Invoices, Matching, and Payables Control

- Invoice upload + OCR extraction
- 2-way match (PO vs invoice) and 3-way match (PO vs GRN vs invoice)
- Exceptions: overcharge, short delivery, duplicate invoice
- Payment schedules and audit logs

D) Payments and Credit (partner-led)

- Pay online (payment gateway integration)
- Pay later/credit terms through regulated partners (phase-based rollout)

E) Inventory + Reorder System

- Stock on hand, expiry/batch, location (dry/chiller/freezer)
- Par levels and reorder points per branch
- POS integration (preferred) or interim manual depletion
- Reorder templates per branch and supplier; stock transfers

F) Waste and Variance Intelligence

- Waste logging with reason codes

- Theoretical vs actual variance (requires recipes + POS or production data)
- Near-expiry action center and recommended corrective actions

G) Forecasting + Kitchen Planning

- Demand forecasts by daypart/weekday/seasonality
- Daily prep plans and batch suggestions
- Menu engineering insights and surplus-based specials suggestions

H) Overseas Supplier Gateway (Phase 2)

- Onboarding portal (documents, translation, compliance checklist)
- Distributor matchmaking within the UAE
- Aggregated demand insights for overseas suppliers

5. AI Layer: Where AI Reduces Operations

AI is implemented as four practical engines. Start with rules and heuristics, then evolve to ML once data is clean.

Engine 1: SKU Normalization and Comparable Pricing (Moat)

- Parse supplier catalogs, invoices, and POs into Normalized SKU objects
- Convert units and pack sizes to comparable unit economics
- Build equivalency sets (same item, different pack; approved substitutes)
- Outcome: true price comparison and fewer ordering errors

Engine 2: AI Autopilot Purchasing (AI Suggested Cart)

- Predict run-rate per item using sales/consumption trends and lead times
- Generate a suggested cart per branch (days of cover + safety stock)
- Recommend supplier per item using price + reliability + lead time
- Approval workflow: AI drafts, Ops Manager edits/approves, PO created
- Learning loop: capture manager edits as feedback

Engine 3: Waste Intelligence + Corrective Actions

- Detect anomalies (variance spikes, unusual waste patterns)
- Root-cause hints: over-portioning, spoilage, receiving errors, spec drift
- Recommend actions: prep plan changes, recipe substitutions, supplier swaps, promotions
- Optional: internal branch transfer suggestions for near-expiry items

Engine 4: Kitchen Copilot (Daily Operations)

- Auto-generate prep lists based on forecast + current stock + expiry priorities
- Batch cooking suggestions and FEFO/FIFO prompts

- Surplus-based recipe ideas (chef approves)
- Voice-to-task: convert voice notes into structured tasks or reorder requests

Supplier AI (to support suppliers)

- Sales dashboards and forecasts by customer, category, and route
- Smart quoting assistant (suggest competitive price bands within margin rules)
- Slow-moving stock alerts and recommended promotions
- Customer churn risk alerts (ordering frequency drops)
- Route consolidation and dispatch insights

6. Competitors and Positioning

Competitors exist across procurement platforms, back-of-house suites, wholesale marketplaces, and distributor ordering portals. AI Purchase Manager wins by closing the loop from purchasing to consumption and waste reduction with an AI approval workflow.

Positioning statement:
AI Purchase Manager is the closed-loop operating system for restaurant procurement and kitchen operations, reducing workload and food cost with AI autopilot purchasing and waste intelligence.

7. UX Design Blueprint (Key Screens)

Restaurant app navigation

- Home Dashboard: AI Suggested Cart (approve/edit), low stock alerts, deliveries arriving, invoices pending approval, spend trend, top cost increases
- Marketplace: search/filters, supplier pages, comparable Normalized SKU view
- RFQ/Quotes: RFQ basket, quote inbox, comparison screen (unit price, lead time, MOQ, delivery fee)
- Orders: drafts, approvals, PO history, tracking timeline
- Receiving (GRN): accept/substitute/reject, photos, discrepancy claim
- Invoices & Payments: match status, pay now/schedule, credit terms (if enabled)
- Inventory: stock on hand, expiry, par levels, transfers, adjustments
- Waste & Insights: waste log, variance dashboard, AI recommendations
- Forecast & Prep: forecast view, prep plan, surplus specials suggestions

Supplier app navigation

- Home: orders to confirm/dispatch, overdue invoices, sales overview
- Catalog: products, pricing, promotions, availability
- Quotes: RFQs received, respond with price/lead time/substitutions
- Orders & Dispatch: picking list, delivery schedules, proof of delivery
- Analytics: sales by customer/category, top products, forecasting, AI promo suggestions

Admin console

- Supplier verification and category permissions
- Catalog QA (duplicates, unit mismatches), Normalized SKU tools
- Dispute resolution center and support workflows
- Platform analytics (response time, success rate, GMV), audit logs, role management

8. Developer Delivery Plan (Phases and Acceptance Tests)

Sprint 0: Foundation

- Finalize PRD, user stories, and acceptance criteria
- Confirm architecture and core data model (NormalizedSKU, PO, GRN, Invoice, Inventory, Recipes, Waste, Forecast)
- Roles/permissions and audit logging
- Integration approach (choose first POS integration and payment gateway)

Phase 1 (MVP 1): Marketplace + RFQ + Orders

- Supplier onboarding + catalog upload (CSV + UI)
- Restaurant onboarding + roles
- Marketplace search/browse and RFQ to multiple suppliers
- Quote response and comparison; basic normalization rules
- PO/LPO generation and order tracking statuses
- Acceptance: RFQ 3 suppliers, compare quotes, create PO, track status

Phase 2 (MVP 2): Receiving + Invoices + Disputes

- GRN receiving workflow with substitutions and photo evidence
- Invoice upload + OCR extraction
- 2-way and 3-way matching and exception flags
- Claims/dispute workflow
- Acceptance: short delivery/overcharge detected and resolved

Phase 3 (MVP 3): Inventory + Low Stock Triggers

- Inventory module (stock on hand, expiry, par levels)
- Depletion: POS integration preferred; interim manual depletion supported
- Low stock alerts and reorder templates per branch/supplier
- Acceptance: low stock triggers reorder suggestions

Phase 4: AI Purchase Manager v1 (Autopilot Cart + Approvals)

- Rules-based suggested cart (days of cover + lead time + safety stock)
- Approval workflow (AI drafts, manager approves, PO created)
- Explainability (why this quantity) + feedback capture
- Acceptance: AI drafts cart, manager approves, PO generated; edits saved

Phase 5: Waste + Forecast + Kitchen Copilot

- Waste logging + variance engine (theoretical vs actual)
- Forecasting baseline and prep plan generator
- AI corrective actions and surplus recipe suggestions

Phase 6: Payments/Credit + Overseas Supplier Portal

- Pay online and settlement tracking
- Partner-led credit terms integration
- Overseas supplier onboarding, compliance checklist, distributor matchmaking, demand insights

9. Release Schedule (2-week Sprint Plan)

- Sprint 0: Foundation → PRD, architecture, data model, roles, audit logs
- Sprints 1–3: Marketplace + RFQ + Orders → MVP 1 live (RFQ, quotes, PO, tracking)
- Sprints 4–5: Receiving + Invoices → MVP 2 live (GRN + invoice matching)
- Sprints 6–7: Inventory + Low Stock → MVP 3 live (inventory + reorder templates)
- Sprints 8–9: AI Cart + Approvals → AI Purchase Manager v1 (autopilot cart)
- Sprints 10–11: Waste + Variance + Actions → waste intelligence + recommended actions
- Sprints 12+: Payments/Credit + Overseas Portal → payment flows + partner credit + cross-border onboarding

Non-negotiable design decisions (to avoid rebuilds)

- Normalized SKU layer is mandatory for comparable pricing
- GRN (receiving) is the truth, not the supplier invoice
- All financial actions must be audit logged
- AI must be explainable and always allow human override
- Pick one POS integration first; perfect it; then expand

References (public competitor sites)

- Watermelon Ecosystem — https://watermelon.market/
- KASO — https://www.kaso.ai/
- Supy — https://supy.io/
- MarketMan — https://www.marketman.com/
- Foodics — https://www.foodics.com/
  Note: URLs are provided for context. Feature coverage varies by market and customer segment.

Pricing & Timeline (Required in Your Proposal — For All Assignments)

At the end of your proposal, you **must** include:

1. A clear **timeline** for each assignment (start date, milestones, delivery date)
2. A clear **price breakdown** for each assignment (fixed price or monthly retainer, including revision limits)

Please provide timeline and pricing for:

- Assignment 1 — Website (design + development + CMS + SEO)
- Assignment 2 — Nutrition pitch deck (content + design)
- Assignment 3 — Instagram content (monthly package)
- Assignment 4 — AI Purchase Manager (product + UX + development phases)

If you want, I can also format this into a one-page "Request for Quotation (RFQ)" message to send on WhatsApp or email