

Product Requirements Document (PRD) Product Name: EarnNow (Base Chain Edition) Version: 1.1 Last Updated: 2025-10-24 Document Owner: (Founder)

1. Executive Summary EarnNow is a Web2-to-Web3 affiliate cashback and referral platform for Southeast Asia where users earn crypto (Base chain tokens + stablecoins + SEN platform token) or localized digital rewards when shopping at partner merchants (Shopee, Lazada, Agoda, etc.). Frictionless onboarding (no wallet required initially), progressive Web3 activation (wallet connect, NFTs, staking), gamified tiers and quests to drive retention. Differentiators: Base Chain settlement (low fees), localized compliance, dynamic reward optimization, merchant analytics intelligence.
2. Problem & Solution Core Problems (SEA E-commerce + Web3 Adoption)
3. Low Realized Value: Shoppers see limited upside beyond discounts; fragmented cashback diminishes perceived benefit.
4. Opaque Reward Lifecycle: Long pending periods + unclear status reduce trust and repeat engagement.
5. Web3 Friction: Wallet setup, gas fees, token volatility intimidate mainstream users.
6. Loyalty Fatigue: Traditional points are non-transferable, illiquid, expiring—eroding motivation.
7. Referral Inefficiency: Single-level or weak referral incentives cap organic growth.
8. Static Reward Dilution: Flat cashback ignores user quality, market conditions, token prices.
9. Merchant Attribution Blind Spots: Poor funnel visibility (click → conversion → approval → refund) across networks.
10. High Reconciliation Overhead: Manual validation of affiliate conversions/refunds increases errors & cost.
11. Fragmented Reward Currencies: Users juggle vouchers, points, promo credits—no unified value layer.
12. Compliance Ambiguity: Token incentives risk misclassification (utility vs security) and regulatory friction.
13. Fraud & Abuse: Fake/self-referrals, rapid account cycling, refund gaming degrade unit economics.
14. Weak Gamification: Cashback-only models lack behavioral loops→ low stickiness.
15. Volatility Anxiety: Users fear earning unstable tokens without stable alternatives.

16. Capital Inefficiency: No mechanisms (staking/NFT boosters) to align long-term commitment.

EarnNow Solutions • Dynamic Reward Engine: Converts affiliate commission into adaptive mix (SEN + stablecoin) with tier multiplier & volatility safeguards. • Transparent Lifecycle: Explicit states (pending/approved/rejected/paid) with ETA & refund window display builds trust. • Progressive Onboarding: Custodial account first; optional Base wallet later to remove initial friction. • Liquid Transferable Rewards: SEN + USDC option outperform expiring Web2 points. • Multi-Tier Referral (roadmap): Expands viral coefficient while controlling pyramiding via diminishing %. • Tier & Multiplier System: Engaged/power users earn proportionally more without harming overall margins. • Merchant Intelligence Dashboard: Conversion funnel, latency, cohort retention, reward elasticity metrics. • Automated Normalization: Affiliate feed ingestion + refund reconciliation pipeline reduces manual ops. • Unified Wallet Ledger: Single balance view lowers cognitive load. • Compliance Layer: KYC thresholds, AML checks, structured token emission avoid regulatory triggers. • Fraud Mitigation: Fingerprint clustering, velocity rules, referral integrity scoring. • Gamified Quests: Daily/weekly tasks drive habitual engagement. • Stablecoin Safety Valve: Optional partial payout in USDC for volatility-sensitive users. • Staking & NFT Boosters (future): Lock value and enhance retention + tier accelerants.

Positioning Statement EarnNow transforms everyday shopping into adaptive, transparent, and liquid Web3 rewards—bridging mainstream e-commerce and blockchain with minimal friction while enhancing merchant attribution and shopper lifetime value.

3. Market Opportunity • SEA e-commerce GMV (2025 est.): USD >230B. • Malaysia + Indonesia: >30% share. • Affiliate marketing CAGR: 10–15%. • Rising Web3 loyalty adoption; early mover advantage for hybrid reward models.
4. Goals & Success Metrics (Year 1) • 100K registered users (30% MAU). • 150 merchants onboarded. • RM 25M tracked GMV. • Avg commission rate 5.2%. • Reward payout ratio 55–65% (user share). • Gross margin 35–45%. • 40% wallet connect rate among active users by month 12. • 50% of new users from referrals.

KPIs: CAC, LTV, TFR (time-to-first-reward), quest participation, tier distribution, churn (<35% inactive 60d), fraud rate (<0.2%), approval latency median (<5 days).

5. Scope MVP: registration, affiliate click tracking, pending→approved reward ledger, custodial wallet, single-level referral, Starter/Silver/Gold tiers, manual merchant admin, SEN + optional USDC rewards, basic analytics. Phase 2+: multi-tier referral, dynamic reward engine, quests, merchant self-serve, fiat off-ramp, staking, NFT boosters, advanced fraud ML, mobile app, localization, partner token bundles. Out of Scope (first

12 weeks): offline POS, DAO governance, proprietary L2, marketplace inventory.

6. Target Users & Personas • Casual Shopper • Power Referrer • Web3 Enthusiast • Merchant Growth Manager • Admin/Operations
7. Core Value Propositions • Frictionless entry → crypto rewards later. • Adaptive higher cashback via tier dynamics. • Liquidity & optional stability (USDC). • Viral growth through structured referral. • Merchant clarity with granular analytics. • Gamified retention loops.
8. Feature Requirements (MVP)
 - 8.1 Registration: email/password, OAuth (Google/Apple), phone OTP, referral code capture.
 - 8.2 Tracking: click_events with affiliate tracking ID, user nullable for pre-signup capture; attribution window per merchant.
 - 8.3 Reward Ledger: states (pending/approved/rejected/paid_out); approval only post refund window.
 - 8.4 Referral: one-level qualifier credit (10% of invitee's qualifying earnings) without deduction.
 - 8.5 Tiers: Starter, Silver (RM200 qualifying), Gold (RM1000); multipliers 1.0x / 1.1x / 1.2x.
 - 8.6 Wallet: custodial ledger (SEN, USDC), withdrawal threshold (Phase 2), price oracle feed.
 - 8.7 Admin Panel: merchant CRUD, transaction review, commission table editing, manual overrides.
 - 8.8 Merchant Integration: affiliate networks (Involve Asia, Impact, Admitad) ingestion via API/CSV.
 - 8.9 Basic Analytics: clicks, conversions, approval latency, top referrers, gross vs user payout.
9. Future Feature Outline • Multi-level referral (10% / 5% / 2%). • Quests JSON-config. • NFT Booster Registry. • SEN staking lock periods (30/90 days). • Dynamic Reward Engine (volatility + tier inputs).
10. Non-Functional Requirements Performance: avg API <300ms (95p <800ms). Availability: 99.5% MVP → 99.9% later. Scalability: 10K concurrent, 1M monthly events. Security: RBAC, OWASP Top 10 mitigations. Data Protection: PII encrypted (AES-256). Compliance: PDPA (MY), PDP (ID), AML triggers. Observability: structured logs, tracing, Prometheus metrics.
11. Technical Architecture (High-Level) Frontend: Next.js (React) SSR. Backend: Node.js (NestJS) or Go (service modules). DB: PostgreSQL primary, Redis cache. Blockchain: Base chain (ERC-20 SEN, staking, NFT boosters). Ingestion: scheduled jobs + webhooks. Queue: Kafka/Redpanda. Analytics: ClickHouse/BigQuery (phase 2). Oracles: Chainlink for SEN/USDC/ETH pricing. Infra: Containerized (Docker, Kubernetes later), CI/CD (GitHub Actions).
12. Data Model (Key Tables) users, wallet_balances, merchants, click_events, affiliate_raw, transactions, tiers, referral_credits, system_configs.
13. APIs (MVP) POST /auth/register, POST /auth/login, GET /user/profile, GET /merchants/list, POST /track/click, GET /rewards/pending, GET

/rewards/history, GET /wallet/balance, GET /referral/stats, GET /admin/transactions, PATCH /admin/transaction/{id}/state.

14. Reward & Tokenomics (Initial) Commission Split Baseline: User 60% / Platform 40%. Tier Multiplier applies to user portion only (Silver +10%, Gold +20%). Cap: $\text{user_reward} = \text{commission} \times 0.75$. SEN Emission (Phase 2): fixed daily pool decreasing quarterly; allocations: quests (40%), tier boosters (25%), staking rewards (25%), ecosystem partnerships (10%). Price safeguards: dynamic reduction if SEN 30d volatility > threshold.
15. Fraud & Risk Controls Device/IP clustering, velocity limits, anomaly detection on identical transaction bursts, referral integrity score, refund reversal events, AML KYC trigger > RM3000 / 30d cumulative withdrawals.
16. Compliance & Legal Token classification review; clear T&C for pending → approved logic; risk disclosure (volatility); data retention (click_events 18m); KYC triggers; jurisdiction disclaimers; withdrawal policy.
17. Analytics & Optimization Roadmap Phase 1: basic dashboards. Phase 2: cohort & referral funnel. Phase 3: predictive LTV & dynamic commission distribution. Phase 4: reinforcement learning suggestions for quest assignment.
18. Operational Processes Daily: approvals batch, tier recalculation, fraud flag review. Weekly: merchant performance + creative refresh. Monthly: token emission adjustment, payout reconciliation audit. Quarterly: commission renegotiation, tier threshold review.
19. Rollout Plan (Indicative) Weeks 1–2 architecture & merchant outreach; 3–5 core backend; 6–7 reward pipeline; 8–9 referral + admin; 10–11 wallet + Base integration; 12 launch. Month 2: quests, multi-tier referral. Month 3: NFT boosters + staking spec. Month 4: dynamic reward engine live.
20. Dependencies Affiliate APIs, Base RPC providers, Chainlink oracles, custody key mgmt (HSM or third-party), legal counsel, analytics infrastructure.
21. Open Questions SEN emission curve (linear vs tapered), fiat off-ramp partner, commission dynamic formula inputs, referral cap policy, NFT acquisition (mint vs partner drop), stablecoin payout ratio default, staking lock reward APR.
22. Risks & Mitigations Merchant adoption risk → start with aggregators; regulatory token risk → delay public sale; refund erosion → approval delay; volatility confusion → stablecoin option; referral abuse → enforced integrity scoring; oracle downtime → fallback pricing; user inactivity → quests + streak multipliers.
23. Differentiators vs Laguna Base chain efficiency; earlier local fiat/voucher integration; dynamic adaptive reward engine; deep merchant analytics; integrated staking + NFT boosters; compliance-first emission controls.

24. Acceptance Criteria (MVP) User registers, clicks merchant link, sees pending reward <24h post ingestion. Approved reward appears post refund window. Tier upgrade visible <6h. Referral qualifying credit applied within nightly batch. Daily margin report variance <0.5%. API error <1% over 48h test. Fraud false positive rate <5%.
25. Monitoring & Alerts Pending approvals aging >5d, oracle price stale >10m, fraud flags spike >3× baseline, ingestion gap >6h, wallet balance mismatch, API latency >800ms (95p), failed withdrawals (Phase 2).
26. Future Strategic Extensions Offline receipt OCR, white-label merchant widget, AI personalized reward prediction, cross-chain expansion (Arbitrum/Optimism), DAO-lite governance, sustainability/ESG merchant tagging, social shopping (group quests).
27. Documentation & Hand-offs OpenAPI spec, ERD diagram, smart contract audits, operations runbook, security checklist (penetration test + secret rotation schedule), onboarding guides (merchant & user), compliance registry mappings.

End of PRD v1.1