

COINBASE

Intelligent Activation Engine

IAE

From 8.7M to 17M Monthly Transacting Users  
12-Agent Cross-Functional PRD | v1.0 |

| Field            | Detail                                                                                                                                |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Initiative       | Intelligent Activation Engine (IAE)                                                                                                   |
| Strategic Pillar | Grow the Everything Exchange   Scale Stable coins & Payments                                                                          |
| PRD Owner        | Senior PM, Consumer Growth & Activation                                                                                               |
| Agent Workflow   | 12-agent sequential: PM > Researcher > Designer > Eng Lead > Data Scientist > GTM > CS > DevOps > Legal > QA > Leadership > Assembler |
| Version          | 1.0 — APPROVED WITH CONDITIONS                                                                                                        |

# 1. Executive Summary

Coinbase has 119 million verified users. Only 8.7 million of them transacted in any given month as of Q2 2025 — a base activity rate of 7.3%, down from 12.9% at the 2021 peak. This is not a customer acquisition problem. It is a product activation problem, costing Coinbase an estimated \$1.5-2.0B in unrealised annual net revenue.

**NORTH  
STAR**

Double Monthly Transacting Users from 8.7M to 17M+ by Q4 2027 — without sacrificing trust, compliance posture, or brand integrity.

The Intelligent Activation Engine (IAE) is a coordinated system of five product surfaces: a personalised Starter Path, a real-time personalised home feed, an AI portfolio coach (Compass), a dormant-user CRM re-engagement programme, and a fee-transparency redesign.

Note on naming: Previous drafts used the acronym IOS (Intelligent Onboarding Suite). This has been renamed IAE (Intelligent Activation Engine) to avoid any confusion with Apple's iOS mobile operating system.

## 1.1 Activation Gap

| Metric                                 | 2021 Peak | Q2 2025 | Impact                             |
|----------------------------------------|-----------|---------|------------------------------------|
| Verified Users                         | 43M       | 119M    | +177% — strong acquisition         |
| Monthly Transacting Users (MTU)        | 8.7M      | 8.7M    | Flat for 4 years — the problem     |
| Base Activity Rate                     | 12.9%     | 7.3%    | −43% decline in conversion         |
| Unrealized Annual Revenue              | —         | —       | ~\$1.5-2.0B at current ARPU        |
| Users citing cognitive overload        | —         | >60%    | Pre-first-trade churn driver       |
| 1-star reviews citing fee surprise     | —         | ~40%    | Trust erosion at conversion moment |
| Dormant users — reactivation potential | —         | ~25-35M | Largest recoverable cohort         |

## 1.2 Root Causes

- Onboarding friction: KYC delays 1-5 days for a material cohort. 75%+ of lifetime activations happen in the first 7 days — missing this window is near-permanent loss.
- Fee opacity: 3-5% retail spread surfaced only at the confirmation screen. Drives ~40% of 1-star reviews.
- Cognitive overload: New users encounter wallet types, gas fees, network differences, and hundreds of assets simultaneously with zero scaffolding. 60%+ never make a first trade.
- No habit loop: Engagement is entirely market-driven. No personalized nudges, no milestone rewards, no re-engagement flows for 25-35M dormant users.

### 1.3 IAE Scope (V1)

- Starter Path: Goal-first 5-step personalised onboarding with fee transparency and KYC wait-state education
- Personalised Home Feed: Ranking model, "Your next step" card, USDC yield banner, contextual education
- Compass AI Coach: RAG-backed portfolio coach with strict compliance guardrails — no investment advice
- CRM Re-engagement: Three segmented programmes (Idle Cash, Dormant Speculator, Never-Traded)
- Fee Transparency Redesign: Full cost in \$ shown before confirmation across all buy/sell flows

2. Market Research & User Personas

2.1 Competitive Activation Benchmarks

| Platform           | 30-Day Activation | Key Strength                                                       | IAE Counter                                                  |
|--------------------|-------------------|--------------------------------------------------------------------|--------------------------------------------------------------|
| Robinhood          | ~45%              | Stock gifting on sign-up; instant ACH; no fee friction on equities | IAE matches speed; adds crypto depth Robinhood lacks         |
| Revolut            | ~52%              | Card issued immediately; immediate FX utility before investment    | IAE adds goal-intelligence and crypto depth Revolut lacks    |
| Binance            | ~38%              | Fee surfaced upfront as the product message — before confirmation  | IAE beats on US regulatory trust and compliance standing     |
| Kraken             | ~28%              | Expert-depth tools for active traders                              | IAE targets the mainstream segment Kraken ignores            |
| Coinbase (current) | ~18%              | Trust and brand — but not yet a product advantage                  | IAE closes 30pp gap via better product design, not marketing |

2.2 User Personas

Persona A — Overwhelmed Newcomer (Primary IAE Target)

| Attribute | Profile                                                                                                            |
|-----------|--------------------------------------------------------------------------------------------------------------------|
| Archetype | Priya S., 29 — Digital Marketing Manager, Bengaluru                                                                |
| Status    | KYC approved. Bank linked. 0 trades. Day 5 since sign-up.                                                          |
| Friction  | Saw a 4.5% spread at the confirmation screen. No explanation of what ETH is. Closed the app. Has not returned.     |
| Core Need | Make a first low-risk purchase in under 5 minutes. Know the total cost before committing. Feel guided, not tested. |
| IAE Fix   | Starter Path routes her to USDC Yield. Fee shown in \$ pre-confirmation. \$2 USDC reward on first trade.           |

Persona B — Dormant Speculator (CRM Re-engagement Target)

| Attribute | Profile                                                                                                                        |
|-----------|--------------------------------------------------------------------------------------------------------------------------------|
| Archetype | Marcus T., 36 — Software Engineer, Austin TX                                                                                   |
| Status    | Registered 2021. Last active Jan 2022. Sold BTC at a loss. App sits unused on phone.                                           |
| Friction  | Generic "Bitcoin is up 12%!" push notification in 2023. Deleted the app. Reinstalled recently but overwhelmed by new features. |
| Core Need | Re-engage with a sense of control, not FOMO. Start with something low-risk. Understand what changed since 2022.                |

|         |                                                                                                                       |
|---------|-----------------------------------------------------------------------------------------------------------------------|
| IAE Fix | Portfolio check email (not a price alert). Compass explains the 2022-2026 context. Feed: idle USD to USDC Yield card. |
|---------|-----------------------------------------------------------------------------------------------------------------------|

Persona C — Cross-Asset Professional (Everything Exchange Target)

| Attribute | Profile                                                                                                                |
|-----------|------------------------------------------------------------------------------------------------------------------------|
| Archetype | Daniela M., 42 — Financial Controller, Sao Paulo                                                                       |
| Status    | Coinbase One subscriber. Active crypto user. Wants to consolidate equities onto Coinbase.                              |
| Friction  | Cannot find stock trading feature. Confused by "Coinbase Capital Markets" branding vs. existing crypto interface.      |
| Core Need | Discover and activate equities without starting over. One login for everything.                                        |
| IAE Fix   | Feed feature-discovery card matched to her stated goal. Compass explains equities onboarding. Minimal re-verification. |

### 3. UX Vision & Design Principles

UX VISION

Every IAE interaction should feel like asking a knowledgeable friend for advice — not operating a financial instrument. Goals before assets. Cost before commitment. One clear next step at a time.

#### 3.1 Five Core Principles

- Goal-First, Not Asset-First: Starter Path asks what the user wants to achieve before showing any asset. Asset selection is a consequence of the goal, not a prerequisite for it.
- Fee Transparency Before Commitment: Total cost (spread + fee in \$ terms) shown before the confirmation screen. A/B data from comparable fintechs shows 15-25% conversion improvement when fee disclosure moves earlier.
- Progressive Disclosure: One primary action at a time. "Your next step" card = single CTA matched to the user's activation state. Advanced features emerge contextually after primary action is completed.
- Mobile-First Without Compromise: Designed for 375px viewport width first. All touch targets minimum 44x44px. Starter Path completes in under 4 minutes on mid-range Android on 4G.
- Accessible by Default: WCAG 2.1 AA minimum. 4.5:1 contrast for body text. Full keyboard navigation. Colour never the sole indicator of status.

#### 3.2 Starter Path — Screen-by-Screen Specs

| Screen                       | Primary CTA                    | Key Design Decision                                                                                       | Acceptance Criterion                                     |
|------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| Step 1: Goal Selection       | Choose your goal               | 6 goals as illustrated cards (not a dropdown). Icon + 1-line plain-English description. Zero jargon.      | User selects goal in median under 20 seconds             |
| Step 2: Experience Level     | Tell us where you are          | 3 levels: Just exploring / Some experience / Active investor. Affects language only, not feature access.  | 100% of users routed; no skip option available           |
| Step 3: Starting Amount      | How much to start with?        | Pre-set amounts (\$10 / \$50 / \$100 / \$500 / Custom). No minimum enforced at this step.                 | Median selection under 10 seconds                        |
| Step 4: Day 1 Recommendation | Your recommended first step    | Single card: asset + plain rationale + total cost in \$. "Why this?" expander available but not required. | Fee shown in \$ before confirmation on 100% of flows     |
| Step 5: Confirm + Reward     | Complete your first investment | Cost breakdown: Asset cost / Spread / Platform fee / You receive. \$2 USDC reward shown as unlocked.      | Reward disbursed within 60 seconds of qualifying trade   |
| KYC Wait State (if pending)  | Learn while you wait           | 3 education cards with progress tracker. KYC estimated wait shown explicitly. \$2 reward teased.          | Education completion rate over 50%; zero dead-end states |

## 4. Technical Architecture & Feasibility

|                     |                                                                                                                                                                                                                                                                 |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ARCHITECTURE</b> | Orchestrator drives 6 specialist agents: KYC Status Agent   Feed Ranker Agent   Compass LLM Agent   CRM Segmentation Agent   Fraud Monitor Agent   Reward Disbursement Agent. All stateless, containerized, horizontally scalable. Redis async message-passing. |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 4.1 Agent Responsibilities

| Agent                     | Responsibility                                                                                                 | Primary Output                                         |
|---------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Orchestrator              | Interprets user context, delegates to sub-agents, synthesises responses, manages conversation state            | Ranked action presented to user in real-time           |
| KYC Status Agent          | Monitors KYC pipeline; triggers wait-state content; fires approval webhook to unlock Starter Path Step 2       | KYC status event + estimated wait time                 |
| Feed Ranker Agent         | Scores and ranks home feed cards using collaborative filtering + stated goal from Starter Path                 | Ordered card list with confidence scores               |
| Compass LLM Agent         | Processes natural language queries via RAG on Coinbase knowledge base; guardrail proxy applied post-generation | Compliant plain-language response to user              |
| CRM Segmentation Agent    | Maintains real-time segment assignment: Idle Cash / Dormant Speculator / Never-Traded                          | Segment label + recommended message + delivery channel |
| Fraud Monitor Agent       | Real-time \$2 USDC reward claim scoring via device fingerprint + payment method cross-check                    | Approve / Flag / Reject signal in real-time            |
| Reward Disbursement Agent | Executes approved USDC transfers; reconciles dead-letter queue for failed disbursements                        | USDC transfer confirmation on-chain                    |

### 4.2 Compass Guardrail Proxy (Two Layers)

- Layer 1 — Prompt Engineering: System prompt explicitly prohibits price predictions, buy/sell recommendations, and guarantee language. Tested against 500+ adversarial prompts before each Compass version update in staging.
- Layer 2 — Output Filter: Post-generation classifier flags any output containing price targets, directional asset language, or investment advice language. Flagged outputs suppressed; pre-approved fallback served. Incident logged for weekly compliance audit.
- Kill Switch: Single feature flag disables Compass free-text, reverts to 3 pre-built flows only. Activatable in under 60 seconds by any on-call engineer without a deployment.

### 4.3 Performance Targets

| Component         | Metric                              | Target        | Measurement                       |
|-------------------|-------------------------------------|---------------|-----------------------------------|
| Starter Path      | First Meaningful Paint on 4G        | < 1.5 seconds | Lighthouse CI on every PR         |
| Home Feed API     | Response time p99                   | < 400ms       | APM (Datadog)                     |
| Feed Ranker Agent | Scoring latency p95                 | < 150ms       | Redis-side profiling              |
| Compass LLM       | First-token latency p95 (streaming) | < 1.5 seconds | LLM gateway metrics               |
| USDC Reward       | Credit post-first-trade             | < 60 seconds  | Reconciliation job SLA monitoring |
| All IAE Surfaces  | Monthly availability                | 99.95%        | Synthetic monitoring via Pingdom  |

### 4.4 Build vs. Buy Decisions

| Component                     | Decision                                 | Rationale                                                                                                        |
|-------------------------------|------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| LLM (Compass)                 | BUY — Anthropic API                      | Core competency is orchestration, not model training. Anthropic handles model safety, scaling, and updates.      |
| Feed Ranking Model            | BUILD — Custom collaborative filter      | Goal-aware routing requires crypto-domain-specific logic that generic recommendation engines lack.               |
| Multi-Agent Framework         | BUILD — Custom Redis orchestration       | Under 50ms inter-agent latency vs 200ms+ with LangChain. 3-5x fewer LLM calls for same output quality.           |
| CRM Platform                  | BUY + Custom Segment API Extension       | Existing Coinbase CRM extended with real-time KYC status + idle balance segment filter API.                      |
| Fraud Detection (USDC Reward) | BUILD — Custom device fingerprint scorer | Incentive abuse pattern is distinct from payment fraud. Generic fraud tools are miscalibrated for this use case. |



## 5. KPIs & Success Metrics

**NORTH  
STAR**

Monthly Transacting Users (MTU) — unique users completing at least one trade (buy, sell, or convert) in a rolling 30-day window. Target: 17M by Q4 2027.

### 5.1 L1 Primary Metrics (IAE Directly Moves These)

| Metric                                           | Baseline           | 6-Month Target | 12-Month Target |
|--------------------------------------------------|--------------------|----------------|-----------------|
| 30-day activation rate (verified to first trade) | ~18%               | 26%            | 35%             |
| Median hours to first trade (new users)          | ~120 hrs           | 48 hrs         | Under 24 hrs    |
| 90-day retention (2+ trades in 90 days)          | ~22%               | 30%            | 38%             |
| USDC Yield adoption (eligible idle-cash users)   | ~8%                | 22%            | 35%             |
| Starter Path completion rate                     | 0% (not yet built) | 55%            | 68%             |
| Dormant user 6-month reactivation rate           | 0% (no programme)  | 12%            | 18%             |
| MTU absolute                                     | 8.7M               | 10.5M          | 12.5M           |

### 5.2 Guardrail Metrics (Must Not Worsen)

| Metric                                 | Rationale                                                                                          | Alert Threshold                                                                |
|----------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Advanced Trade MTU                     | Fee transparency may route fee-sensitive users to Advanced Trade — acceptable but must be modelled | Alert if AT MTU falls more than 5% month-on-month without revenue model update |
| Revenue per MTU (ARPU)                 | Activation improvement must not come purely from lower-value users                                 | Alert if ARPU falls more than 10% while MTU grows more than 15%                |
| 7-day app uninstall rate post CRM push | CRM volume cap validation — weekly push must not spike churn                                       | Alert if uninstall rate exceeds 2.5% in 7 days following any CRM batch         |
| Compass compliance incidents           | Zero tolerance for financial advice language in production                                         | Alert on first confirmed incident; kill switch activated immediately           |

5.3 Experiment Design

- CUPED variance reduction applied to all IAE A/B tests — controls for pre-experiment user heterogeneity
- MDE: 10% relative lift on 30-day activation rate. Power: 80%. Alpha = 0.05. Required sample: approximately 87K users per arm.
- Minimum test duration: 4 weeks (novelty effect guard); 6 weeks for CRM segment experiments
- Holdout groups stratified by geo, device type, account age, and prior trade history — no metric contamination across 4 concurrent surface tests.

6. Go-to-Market & Launch Strategy

POSITIONING

IAE is not announced to users as a product. It is experienced as a better Coinbase. External message: "Coinbase now takes 2 minutes to make your first investment. We show you the full cost before you commit."

6.1 Phased Launch Plan

| Phase                  | Weeks    | Ships                                                                                                 | Entry Gate                            | Success Gate                                                      |
|------------------------|----------|-------------------------------------------------------------------------------------------------------|---------------------------------------|-------------------------------------------------------------------|
| Phase 0 — Spike        | Wk 1-3   | Compass infra feasibility. Fraud model validation. Feed ranker cold-start test.                       | PRD approval + resource confirmation  | Compass p95 under 3s in staging. Fraud false-positive under 1.5%. |
| Phase 1 — Foundation   | Wk 4-11  | Starter Path (iOS + Android). Fee transparency. KYC wait-state cards. \$2 USDC reward. A/B test live. | Phase 0 gates met                     | Over 10% relative lift in 30-day activation at p < 0.05.          |
| Phase 2 — Intelligence | Wk 12-20 | Personalised Feed V1. Compass MVP (iOS). CRM: Idle Cash Holder segment.                               | Phase 1 A/B statistically significant | Compass helpfulness over 72%. USDC yield uplift over 8pp.         |
| Phase 3 — Scale        | Wk 21-32 | Compass Android and Web. All 3 CRM segments. Feed V2. ES/PT/FR/DE localisation.                       | Phase 2 on-track at 90-day read       | MTU trajectory to 12.5M. Zero compliance incidents.               |

6.2 Key Milestones

| Milestone                       | Target Date          | Owner                     |
|---------------------------------|----------------------|---------------------------|
| All PRD pre-conditions resolved | Wk 3-5 from approval | PM + Legal + Eng Director |
| Phase 1 beta — 1K users         | Week 8               | Growth PM                 |
| Phase 1 A/B test read           | Week 11              | Data Science Lead         |
| Phase 2 Compass beta (iOS)      | Week 16              | PM + ML Platform          |
| Phase 3 full global rollout     | Week 32              | PM + GTM                  |
| First executive MTU readout     | Week 20              | PM + Finance              |
| Board-level MTU update          | Q4 2026              | CPO + CFO                 |

## 7. Support Strategy & Edge Cases

### TARGET

60% of IAE-attributable support contacts resolved via Compass or self-service before reaching a human agent. 40% reduction in fee-related 1-star reviews within 90 days of Phase 1 launch.

### 7.1 Top 10 Edge Cases — IAE Specific

| #     | Edge Case                                                             | Primary Handling                                                                                                       | Fallback                                                                                        |
|-------|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| EC-01 | KYC approval exceeds 7 days                                           | Day 7: automated email with direct Identity Operations link and ETA. Starter Path state fully preserved.               | Goodwill \$5 credit if delay exceeds 14 days.                                                   |
| EC-02 | USDC reward claimed on second device after first flagged for fraud    | Both device fingerprint AND payment method must be clean. Neither alone is sufficient.                                 | Manual Fraud team review within 24 hours. Legitimate users receive reward plus explanation.     |
| EC-03 | User interprets Compass response as investment advice                 | Thumbs-down triggers Compliance review within 2 hours. Confirmed non-compliant: output filter retrained same day.      | Compass reverts to 3 pre-built flows only until retraining is validated in staging.             |
| EC-04 | Bank ACH fails on Starter Path Day 1 Action                           | 3 clear alternatives shown: debit card / different bank / USDC transfer. State preserved at Step 5, not Step 1.        | Route to Support with full Starter Path context pre-loaded in agent CRM.                        |
| EC-05 | Dormant re-engagement email triggers unsubscribe request              | Processed across all IAE CRM channels within 24 hours. Preference stored for 5 years.                                  | Escalate if account has outstanding balance issue requiring mandatory contact.                  |
| EC-06 | Non-English user before localisation is live                          | Device locale detected. Unsupported language: offer English or opt-in for language waitlist notification.              | Email notification sent when their language goes live in Phase 3.                               |
| EC-07 | DeFi goal selected by user in a restricted jurisdiction               | KYC country detected; DeFi fast-track suppressed. User routed to USDC Yield or BTC DCA instead with plain explanation. | Route to Regulatory Support with jurisdiction-specific script if user escalates.                |
| EC-08 | Compass returns text containing an external URL                       | Output filter strips all external URLs before response reaches user. Query redirected to Coinbase Learn equivalent.    | If no Learn equivalent exists, Compass states this explicitly and suggests an alternative path. |
| EC-09 | A/B test variant shows more than 10% worse activation at interim read | Automated pause: test stops if variant shows worse than 10% activation with more than 5K users per arm.                | Revert to control immediately. Post-mortem required within 48 hours.                            |
| EC-10 | User completes Starter Path then immediately requests a withdrawal    | No friction added. Withdrawal proceeds per standard Coinbase rules. Compass available to explain ACH hold period.      | No escalation required unless withdrawal triggers a separate KYC review event.                  |

## 7.2 SLA Framework

| Severity      | Definition (IAE Context)                                                                                  | First Response                  | Resolution              |
|---------------|-----------------------------------------------------------------------------------------------------------|---------------------------------|-------------------------|
| P0 — Critical | Compass compliance incident; USDC reward fraud at scale; Starter Path fully down                          | Under 15 min (24/7)             | Under 4 hours           |
| P1 — High     | USDC reward not credited after 2 hrs; KYC delay over 10 days; Feed serving wrong content to over 1K users | Under 1 hour (24/7)             | Under 8 business hours  |
| P2 — Medium   | Individual Compass compliance flag; Starter Path step bug; CRM batch delivery failure under 5%            | Under 4 hours (business hours)  | Under 24 business hours |
| P3 — Low      | UI copy issue; education card typo; localisation string mismatch                                          | Under 24 hours (business hours) | Under 5 business days   |

## 8. Infrastructure, Reliability & Scaling

### 8.1 Uptime SLOs

| Service                    | SLO Target                          | Alert Threshold                                                                         |
|----------------------------|-------------------------------------|-----------------------------------------------------------------------------------------|
| Starter Path (all 5 steps) | 99.95% monthly availability         | Under 5 minutes downtime without incident declaration; synthetic checks every 2 minutes |
| Home Feed API              | 99.9% monthly availability          | Error rate above 0.5% for more than 3 minutes triggers P1 alert                         |
| Compass LLM endpoint       | 99.5% monthly (Anthropic SLA-bound) | 3 consecutive gateway failures trigger automatic fallback to 3 pre-built flows          |
| USDC Reward Disbursement   | 99.99% — zero loss tolerance        | Any single failed disbursement triggers P1 alert immediately                            |
| CRM Push Delivery          | 99.0% monthly delivery rate         | Batch delivery rate below 95% triggers investigation                                    |

### 8.2 Infrastructure Stack by Phase

| Phase   | Scale                   | Compute                                                                                               | Database + Cache                                                                                  | Est. Cost Per Month  |
|---------|-------------------------|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------|
| Phase 1 | Under 100K concurrent   | ECS Fargate: 4-8 tasks (2 vCPU / 4GB RAM). Agent workers: 3 tasks.                                    | Aurora PostgreSQL r5.large Multi-AZ + 1 read replica. ElastiCache Redis r5.large.                 | \$8,000 to \$12,000  |
| Phase 2 | 100K to 500K concurrent | ECS or EKS: 15-25 pods. Feed Ranker on dedicated node group.                                          | Aurora r5.2xlarge + 3 read replicas. PgBouncer connection pooling. Redis 4-node cluster.          | \$25,000 to \$40,000 |
| Phase 3 | 500K+ concurrent        | EKS: 50-100 pods, mixed on-demand and spot instances. Dedicated ML inference cluster for Feed Ranker. | Aurora Serverless v2 or r5.4xlarge + 5 replicas. Sharding by user_id range. Redis 8-node cluster. | \$55,000 to \$80,000 |

### 8.3 Disaster Recovery

| Scenario                                   | RTO           | RPO             | Recovery Method                                                                          |
|--------------------------------------------|---------------|-----------------|------------------------------------------------------------------------------------------|
| IAE application failure (single AZ)        | Under 15 min  | Zero data loss  | ECS health check + task restart; ALB automatically reroutes to healthy instances         |
| Aurora DB failure (Multi-AZ failover)      | Under 2 min   | Under 5 min     | Aurora Multi-AZ automatic failover; DNS update propagation                               |
| Anthropic API outage (Compass unavailable) | Under 2 min   | N/A (stateless) | Automatic fallback to 3 pre-built Compass flows; no manual intervention required         |
| Full regional failure (us-east-1 down)     | Under 4 hours | Under 15 min    | Route53 health check failover to us-west-2 standby; manual Aurora read-replica promotion |

## 9. Legal, Privacy & Compliance

### BLOCKER

The following 5 items must be fully resolved before any IAE surface reaches more than 1% of users in production. Written Legal and Compliance sign-off required on each item before Phase 1 launch.

### 9.1 Pre-Launch Compliance Blockers

| #    | Blocker                                                                                                                                                                                                                   | Owner           | Deadline |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------|
| B-01 | \$2 USDC reward FinCEN classification: promotional bonus vs. monetary transfer. Determines SAR reporting obligations and reward programme structure.                                                                      | Legal + Finance | Week 4   |
| B-02 | Compass and MiFID II (EU users): Does any Compass response constitute investment advice under Article 9? If yes, Compass must be geographically suppressed for EU users until compliant disclosure framework is in place. | EU Compliance   | Week 5   |
| B-03 | USDC yield banner — state-level suppression list (e.g., NY DFNS consent order constraints). Must be dynamically enforced via KYC country geo-detection. List must be current at launch.                                   | US Compliance   | Week 4   |
| B-04 | Starter Path Step 1 goal selection may infer financial status — GDPR Article 9 special category data. Confirm lawful basis (legitimate interest vs. explicit consent) and update privacy notice before launch.            | Privacy         | Week 3   |
| B-05 | Compass SEC RIA exposure: Legal must confirm that IAE guardrails (no buy/sell recommendations, no price targets) are sufficient to avoid SEC Registered Investment Adviser registration requirement.                      | Legal           | Week 2   |

### 9.2 Compass Output Rules

#### Strictly Prohibited (Output Filter — Zero Tolerance in Production)

- "You should buy / sell / hold [asset]" — any directive language in any form
- Price targets, price predictions, or directional price forecasts for any asset
- "Safe", "guaranteed", or "risk-free" applied to any asset or Coinbase product
- Comparison of USDC yield to FDIC-insured deposits — USDC is not FDIC-insured
- Legal or tax advice of any kind, regardless of how the question is framed

#### Permitted Content

- Plain-language explanations of what an asset or product is
- Factual descriptions of how Coinbase products work: fees, mechanics, eligibility criteria
- Definitions of financial terminology: DCA, staking, gas, liquidity, L2, etc.
- Factual portfolio descriptions: the user's current value, allocation, and recent changes
- Deep links to Coinbase Learn articles for users who want to read further

9.3 Data Retention — IAE Specific

| Data Category                         | Retention Period                          | Basis                                                                   |
|---------------------------------------|-------------------------------------------|-------------------------------------------------------------------------|
| Starter Path goal and preference data | Active account + 90 days post-closure     | Contractual necessity for personalisation delivery                      |
| Compass sessions — opted-in users     | 12 months, then anonymised                | Legitimate interest (service improvement) — disclosed in privacy notice |
| Compass sessions — opted-out users    | Session only, deleted on session end      | User choice — technically enforced, not just policy-based               |
| \$2 USDC reward claim records         | 7 years                                   | Financial record-keeping requirements (IRS and FinCEN)                  |
| CRM re-engagement interaction log     | 36 months, then aggregated and anonymised | Legitimate interest plus CCPA compliance                                |

QA AGENT Testing Strategy & Acceptance Criteria

10. QA Strategy & Acceptance Criteria

10.1 Testing Pyramid

- Unit Tests (60% of test suite): Compass prompt logic, fee calculation, reward disbursement, Feed Ranker output determinism. Coverage target: above 85%. Run on every commit.
- Integration Tests (30%): API contracts between all IAE surfaces and backend agents, Compass RAG retrieval accuracy, CRM segment API correctness, USDC reward system end-to-end in staging. Run on every PR.
- End-to-End Tests (10%): Full Starter Path journey for each of 3 persona routes, Compass guardrail validation session, CRM email to app open to first trade conversion path. Run before every production deploy.

10.2 Compass LLM Evaluation Framework

| Criterion                        | Method                                                                                                     | Acceptance Threshold                                                              |
|----------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Hallucination rate               | Cross-reference outputs against Coinbase knowledge base ground truth; 200 random queries reviewed per week | Under 2% hallucination rate — factually incorrect statements                      |
| Compliance safety (LLM-as-Judge) | Claude Opus as judge evaluates 5% random sample for financial advice language                              | Harmlessness = 100% safe; zero investment advice language permitted in production |
| Helpfulness (user-rated)         | In-session thumbs-up and thumbs-down rating plus optional 1-sentence feedback                              | Above 72% helpful at beta launch; above 78% at 90 days post-launch                |
| Prompt consistency               | Same query run 10 times; cosine similarity measured across outputs                                         | Above 0.85 cosine similarity across 10 runs for all factual query types           |

|                             |                                                                                      |                                                                           |
|-----------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Guardrail bypass resistance | 500+ adversarial jailbreak prompts run in staging before each Compass version update | Zero successful guardrail bypasses in production within 90 days of launch |
| Latency under load          | Compass endpoint load-tested at 10x expected peak concurrent sessions                | p95 under 3 seconds maintained at 10x peak load                           |

### 10.3 Launch Readiness Gates — All 10 Must Be Green

1. All unit and integration tests passing. Code coverage at or above 85%.
2. Compass guardrail: zero bypasses in 500 adversarial prompt tests in staging.
3. Starter Path: median completion under 4 minutes on Pixel 6a (4G). Zero dead-end states.
4. Fee transparency confirmed present in 100% of buy/sell flows via automated UI assertion.
5. USDC reward: end-to-end tested for 1,000 synthetic trades in staging. Zero under or over payments.
6. Fraud Monitor: false-positive rate under 1.5% on 10,000 synthetic legitimate reward claims.
7. CRM segment API returns correct segment label for 100% of all test accounts.
8. Compliance written sign-off received on Compass disclaimers, output filter rules, and USDC yield banner copy.
9. All 5 Legal pre-conditions (Section 9.1, B-01 through B-05) resolved and documented.
10. Leadership Go/No-Go call completed with CPO, Engineering Director, Legal, and Compliance present.

**LEADERSHIP AGENT**
Executive Review & Sign-off

## 11. Leadership Review & Sign-off

### 11.1 Assessment

This PRD addresses the most significant product gap in Coinbase's consumer portfolio: the failure to convert 119M verified users into active participants. The business case is sound. The activation gap has cost Coinbase 5+ percentage points of base activity rate over four years, equating to \$1.5-2.0B in annual unrealised revenue at current ARPU.

The proposed intervention is targeted, measurable, and bounded. IAE does not require KYC pipeline changes, fee restructuring, or new regulatory licences. The 12-agent assembly approach produces genuine cross-functional depth — Compass compliance guardrails, USDC reward fraud controls, Feed Ranker cold-start handling, and CRM push volume governance are all domain-specific constraints that a single-author PRD consistently misses.

DECISION

APPROVED WITH CONDITIONS — IAE is authorised to proceed to Phase 0 (technical spike). Phase 1 kickoff is authorised upon resolution of all 4 conditions below.



## 11.2 Approval Conditions

| #    | Condition                                                                                                                                                                           | Owner                  | Deadline |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------|
| C-01 | Compass infrastructure feasibility confirmed: p95 latency under 3s in staging; LLM cost model validated at \$0.05 per session budget target                                         | Eng Lead + ML Platform | Week 3   |
| C-02 | Full team resource confirmed by name: Feed Ranker, Compass, Starter Path, CRM, Fraud Monitor, and DevOps leads all committed. No shared resourcing with conflicting Q3 initiatives. | Eng Director + HR      | Week 2   |
| C-03 | Legal pre-conditions B-01 through B-03 resolved. Written legal opinions filed. USDC suppression list integrated into geo-detection layer and tested.                                | Legal + EU Compliance  | Week 5   |
| C-04 | GTM plan and Coinbase Advisor integration alignment confirmed. IAE positioning does not conflict with Coinbase Advisor roadmap. App store update copy approved by Brand.            | PM + Marketing         | Week 4   |

## 11.3 Phase Approval Gates

| Gate         | Transition         | Decision Owner          | Required Evidence                                                                                                                     |
|--------------|--------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Gate 1       | Phase 0 to Phase 1 | Engineering Director    | Compass spike results. Fraud model false-positive rate under 1.5%. All C-01 through C-04 conditions met.                              |
| Gate 2       | Phase 1 to Phase 2 | CPO + Data Science Lead | A/B test showing over 10% relative lift in 30-day activation rate at $p < 0.05$ with at least 87K users per arm.                      |
| Gate 3       | Phase 2 to Phase 3 | CPO + Finance           | Compass helpfulness above 72%. USDC yield uplift above 8pp. CRM reactivation above 10%. Zero compliance incidents. MTU on trajectory. |
| Board Update | Q4 2026            | CEO + CFO               | MTU trajectory confirmed for 17M by Q4 2027. IAE attributed revenue impact quantified by Finance.                                     |

## 11.4 Resource Estimate Summary

| Function                                       | Phase 1 FTE | Phase 2 FTE | Phase 3 FTE | Total Person-Months |
|------------------------------------------------|-------------|-------------|-------------|---------------------|
| Backend Engineering (agents, APIs, CRM)        | 3.0         | 3.0         | 2.5         | ~51                 |
| Frontend (Starter Path, Feed, Compass UI)      | 2.5         | 2.0         | 1.5         | ~36                 |
| ML and Data Science (Feed Ranker, Compass RAG) | 1.5         | 1.5         | 1.0         | ~24                 |
| DevOps and Platform Engineering                | 0.5         | 1.0         | 1.0         | ~15                 |
| QA Engineering                                 | 1.0         | 1.0         | 0.5         | ~15                 |
| Product Management                             | 1.0         | 1.0         | 0.5         | ~15                 |
| Design                                         | 1.0         | 0.5         | 0.25        | ~10                 |
| Legal and Compliance (fractional)              | 0.5         | 0.25        | 0.1         | ~5                  |
| TOTAL                                          | 11.0 FTE    | 10.25 FTE   | 7.35 FTE    | ~171 Person-Months  |

## 11.5 Sign-off Table

| Role                           | Decision                                    | Date          |
|--------------------------------|---------------------------------------------|---------------|
| Chief Product Officer          | Approved with Conditions                    | June 16, 2026 |
| VP, Consumer Product           | Approved with Conditions                    | June 16, 2026 |
| Engineering Director, Consumer | Pending C-01 + C-02 resolution              | TBD (Week 3)  |
| Chief Legal Officer            | Pending C-03 resolution                     | TBD (Week 5)  |
| Chief Compliance Officer       | Pending C-03 resolution                     | TBD (Week 5)  |
| VP Finance                     | Acknowledged — financial model under review | June 16, 2026 |
| Design Lead, Consumer          | Acknowledged                                | June 16, 2026 |
| Data Science Lead              | Acknowledged                                | June 16, 2026 |

## 12. Appendix

### A. Open Questions Log

| #     | Question                                                                                                                                                                      | Owner                   | Resolution By           |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|
| OQ-01 | Can Compass use the existing Anthropic API contract or does it require a new usage-tier agreement with additional legal terms?                                                | ML Platform Lead        | Week 3                  |
| OQ-02 | Should Compass be paywalled to Coinbase One subscribers after beta, or remain on the free tier permanently? Affects GTM positioning and ARPU model significantly.             | CPO + Finance           | Week 12 (Phase 1 gate)  |
| OQ-03 | Does the Feed Ranker require real-time feature serving at under 100ms, or is a 5-minute pre-computed scoring batch sufficient for the user experience?                        | Eng Lead + Data Science | Week 4                  |
| OQ-04 | If Phase 1 A/B shows less than 10% lift (below MDE threshold), do we iterate on Starter Path before Phase 2 or proceed and accept a longer timeline to 35% activation target? | CPO + PM                | Week 11 (gate decision) |

### B. Glossary

| Term            | Definition                                                                                                                                                                              |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IAE             | Intelligent Activation Engine — the product initiative defined in this PRD. Renamed from IOS (Intelligent Onboarding Suite) in v1.0 to avoid confusion with Apple iOS operating system. |
| MTU             | Monthly Transacting User — a unique user who completes at least one trade (buy, sell, or convert) in a rolling 30-day window. The primary Coinbase consumer business metric.            |
| Starter Path    | The 5-step goal-first personalised onboarding flow that is IAE Surface 1. Note: not related to Apple iOS.                                                                               |
| Compass         | The AI-powered educational portfolio coach (IAE Surface 3). Strictly informational — not a registered investment adviser and cannot provide buy or sell recommendations.                |
| USDC Yield      | Coinbase's interest-bearing USDC product. Currently approximately 4% APY. Not FDIC-insured. State-level availability varies by consent order.                                           |
| Feed Ranker     | Collaborative filtering model combined with goal-matching logic that powers personalised home feed card ordering.                                                                       |
| RAG             | Retrieval-Augmented Generation — technique that grounds Compass's LLM responses on Coinbase's reviewed knowledge base, preventing factual hallucination.                                |
| Guardrail Proxy | The two-layer system (prompt engineering + post-generation output classifier) that prevents Compass from producing financial advice content.                                            |
| CUPED           | Controlled-experiment Using Pre-Experiment Data — a variance reduction technique that improves A/B test statistical power by controlling for pre-experiment user differences.           |
| MDE             | Minimum Detectable Effect — set at 10% relative lift on 30-day activation rate for all IAE experiments, powered at 80%, alpha = 0.05. Requires approximately 87K users per test arm.    |

C. Agent Contribution Log

| Agent                | Primary Contribution to This PRD                                                                                                                 |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| PM Agent             | Executive Summary, \$1.5-2.0B gap quantification, 4 root causes, V1 scope definition, IAE naming rationale                                       |
| Researcher Agent     | 4 personas (Priya/Marcus/Arjun/Daniela), competitive activation benchmarks (Robinhood 45%/Revolut 52%), TAM context                              |
| Designer Agent       | 5 design principles, 6 Starter Path screen specs with acceptance criteria, home feed card taxonomy, mobile-first constraints                     |
| Eng Lead Agent       | 7-agent architecture diagram, Compass 2-layer guardrail proxy spec, build vs. buy for 5 components, 5 technical risks                            |
| Data Scientist Agent | North Star + L1/L2/guardrail metric framework, CUPED experiment design, 87K sample size calculation, 90-day calendar                             |
| GTM Agent            | 4-phase launch plan with entry and success gates, IAE positioning statement, channel strategy, milestone table with owners                       |
| CS Agent             | 10 IAE-specific edge cases with fallback handling for each, 4-tier SLA framework, 60% self-serve deflection target                               |
| DevOps Agent         | 3-tier infra stack (\$8K to \$80K per month by phase), uptime SLOs, DR RTO/RPO table, CI/CD pipeline spec                                        |
| Legal Agent          | 5 compliance blockers (FinCEN/MiFID II/USDC state suppression/GDPR/SEC), Compass permitted and prohibited output rules, data retention schedules |
| QA Agent             | 6-criterion Compass LLM evaluation framework, 10 launch readiness gates, 6 performance benchmarks, testing pyramid breakdown                     |
| Leadership Agent     | Approved with Conditions decision, 4 numbered conditions, 4 phase gates, 171 person-month resource estimate, sign-off table                      |
| PRD Assembler        | Renamed IOS to IAE (Apple iOS conflict), cross-reference validation across all 11 sections, glossary assembly, open questions log                |

D. Revision History

| Version | Date / Changes                                                                                                                                                                                                      |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| v1.0    | June 16, 2026 — Initial 12-agent assembly. Approved with Conditions by CPO. Critical fix: renamed from IOS to IAE to avoid confusion with Apple iOS. Cover text contrast corrected to WCAG-compliant dark-on-white. |

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