Introduction/Overview

This Product Requirements Document (PRD) outlines the refactoring of the existing client onboarding workflow to align with the specified business process diagram. The current workflow sends all forms and documents simultaneously and lacks proper sequencing, parallel paths for mandate determination, and conditional branching for approvals/denials. The refactored workflow ensures accurate step-by-step progression, including AI-driven calculations, applicant interactions, risk checks, and final approvals, to streamline onboarding while reducing errors and improving compliance in a financial services context.

The goal is to create a reliable, event-driven workflow that handles applicant entry, quotation, form submissions, mandate processing, AI analysis, and risk reviews, ultimately leading to approval or denial.

Goals

- Implement sequential and parallel processing to match the diagram, ensuring forms and documents are requested only when needed.
- Enable conditional branching based on overlimit checks, approvals, and risk assessments.
- Integrate AI for quotation calculation and document analysis to automate decision-making where possible.
- Support manual reviews by account and risk managers with clear notifications and pauses.
- Achieve end-to-end workflow completion with proper logging and error handling, targeting 80% automation for standard cases.
- Reduce workflow completion time by 30% through optimized sequencing and parallel paths.

User Stories

- As an Account Manager, I want to input applicant details and review AI-generated quotations so that I can approve or notify overlimits before proceeding.
- As an Applicant, I want to receive and sign quotes via email, then fill facility applications and mandate-specific documents, to complete my onboarding efficiently.
- As a Risk Manager, I want to receive notifications for procurement checks and final reviews, with access to AI analysis results, so I can approve or deny based on data.
- As a System Admin, I want workflow pauses for human reviews and automatic resumption upon decisions, to ensure compliance without manual tracking.
- As an Applicant, I want conditional form requests (e.g., Absa form only after contract signing), to avoid overwhelming document submissions.

Functional Requirements

- **Applicant Entry and Quotation**: Capture user entry and manager inputs; use AI to calculate quotation; manager reviews and checks for overlimits (notify if yes, email quote if no).
- **Quote Signing and Feedback**: Applicant signs quote; ingest feedback to workflow to trigger next steps.
- **Facility Application**: Email and allow applicant to fill facility form.
- **Mandate Determination**: Determine mandate type and branch into parallel paths: (1) Procurement check with risk manager review (approve/clear or deny); (2) Send and fill mandate documents.
- **AI Analysis**: AI analyzes submitted documents via agents for bank validation, risk/bank analysis, and UN sanction checks; aggregate results for final review.
- **Final Review and Approval**: Risk manager performs final review; if approved, account manager edits/submits contract and Absa form; applicant signs contract and fills Absa form; wait for both; manual final approval button to end workflow.
- **Denial Paths**: Immediate stop and notification on denials (e.g., from overlimit, procurement, or final review).
- **Notifications and Pauses**: Use email/SMS for applicant/manager alerts; workflow pauses for human inputs (e.g., approvals) and resumes on events.
- **Logging and Monitoring**: Log all steps, decisions, and errors for audit; provide dashboard visibility into workflow status.

Non-Goals (Out of Scope)

- Integration with external training scheduling or welcome pack sending (noted as not for this PRD).
- Advanced AI model training or custom ML components beyond existing analysis agents.
- Mobile-specific optimizations or applicant portal (assume email/web forms).
- Handling of non-standard mandate types beyond diagram.
- Data migration from old workflows or backward compatibility with previous versions.

Technical Considerations (Optional)

- Use Inngest for workflow orchestration with steps like 'run-itc-check' refactored to 'ai-calculate-quotation', adding parallel branches via Inngest's step branching.
- Integrate with existing services (e.g., ProcureCheck for procurement, AI for analysis) but mock where needed.
- Leverage Drizzle ORM for database interactions (e.g., logging workflow events).
- Ensure error handling for timeouts (e.g., 14-day document upload) and retries for API calls.
- Should integrate with existing Auth module (Clerk) for manager access.