

# **Product Requirements Document (PRD)**

## **PayEazy Multi-Currency Payment Gateway**

**MVP  
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## 1.0 Overview

PayEazy is a multi-currency payment gateway that bridges fiat and crypto payments for African merchants and global customers. It allows customers to pay in Naira, Dollar, or Crypto (USDT/ETH) while merchants choose to receive settlements in USD or USDT instantly and securely.

### 1.1 Problem Statement

Cross-border and local payments between African merchants and international customers remain **slow, fragmented, and expensive**. Merchants often face settlement delays, high FX fees, and limited options for receiving in preferred currencies (especially USD or crypto).

Similarly, customers struggle with payment friction, many cannot pay in their desired currency or crypto asset, and existing gateways provide little transparency or flexibility in conversion.

There is a growing demand for a **seamless, low-cost payment gateway** that allows customers to pay in **fiat or crypto** while enabling merchants to **choose their settlement currency (USD, NGN, or USDT)**.

### 1.2 Solution

**PayEazy** is a **multi-currency payment platform** that bridges **fiat and crypto payments** in one API. Customers can pay in **Naira, Dollar, or Crypto (USDT/ETH)**, while merchants can choose to **receive settlements in USD or USDT** instantly.

The system integrates **Flutterwave** and **OPay** for fiat rails, and **Uniswap** or **1inch** for on-chain conversions. PayEazy provides:

- Hosted checkout and embeddable widget for easy integration.
- Fast settlements in fiat or crypto.
- Secure, transparent conversion logic and real-time payment status.
- Simple REST APIs and dashboard for merchants.

### 1.3 User Flows

#### Customer Flow:

- Customer selects “Pay with PayEasy.”
- Merchant backend creates payment intent via PayEasy API.
- Customer pays using fiat or crypto options.
- PayEasy verifies payment (via webhook or on-chain), converts funds if needed, and settles to the merchant in their preferred currency.

#### Merchant Flow:

- Merchant registers, completes KYC, and configures payout preferences.
- Integrates PayEasy API or widget into checkout.
- Views transactions, settlements, and conversion rates on dashboard.
- Requests manual payouts when needed.

### 1.4 Target Audience

- **African merchants** receiving international payments (e-commerce, SaaS, freelancers).
- **Global customers** paying African businesses in crypto or foreign currencies.
- **Startups, digital agencies, and freelancers** requiring easy USD or USDT settlements.
- **Online marketplaces and merchants** needing flexible checkout options.

## 1.5 Revenue Model

PayEazy will generate revenue from multiple channels:

1. **Transaction Fees:** 1.5–3% per successful transaction.
2. **Conversion Margin:** Small markup (0.5–1%) on currency or token swaps.
3. **Merchant Subscription Plans:** Premium tier for faster settlements, lower fees, and advanced analytics.
4. **API-as-a-Service:** Paid API access for white-label partners or fintechs.
5. **Liquidity Yield (future):** Interest or yield earned from idle stablecoin reserves.

## 1.6 Go-To-Market Strategy

- **Strategic Partnerships:** Collaborate with Flutterwave, OPay, and crypto wallets for easy onboarding.
- **Social Proof:** Onboard early merchants and showcase testimonials on launch.
- **Influencer Marketing:** Partner with digital entrepreneurs and Web3 communities.
- **Referral Program:** Reward merchants and users for successful referrals.
- **Community Launch:** Introduce PayEazy to Web3 and developer communities (Web3Bridge, Dada Devs, etc.).

## 1.7 User Stories

- As a **customer**, I want to pay in Naira or USDT so I can use my preferred payment method.
- As a **merchant**, I want to receive payments in USD or USDT so I can avoid FX loss.
- As a **merchant**, I want to integrate PayEazy easily via API or widget.
- As a **customer**, I want a simple checkout page that shows my payment options clearly.

- As an **admin**, I want to track all transactions, conversions, and settlements.
- As a **merchant**, I want real-time updates when a customer's payment is confirmed.

## 1.8 Supported Currency Conversions

### A. Fiat ↔ Fiat

- Naira → Naira
- Naira → Dollar
- Dollar → Naira
- Dollar → Dollar

### B. Fiat ↔ Crypto

- Naira → USDT
- Dollar → USDT

### C. Crypto ↔ Fiat

- USDT → Naira
- USDT → Dollar
- ETH → Naira
- ETH → Dollar

### D. Crypto ↔ Crypto

- USDT → USDT
- USDT → ETH
- ETH → USDT
- ETH → ETH

## 2.0 Functional Requirements (FRD)

### 2.1 Functional Overview

PayEazy connects customers and merchants via a secure multi-currency gateway supporting both fiat and crypto payments. It includes:

- Hosted checkout widget
- RESTful APIs for payment creation and status
- Fiat and crypto collection
- Settlement orchestration
- Merchant dashboard and API management

### 2.2 Core Functional Requirements

#### 2.2.1 Hosted Checkout / Widget:

- Displays order summary, payment options, and conversion rates.
- Integrates seamlessly on merchant sites via <script> embed or hosted page.

#### 2.2.2 Payment Intent API:

- Endpoint: POST /v1/payment-intents
- Creates and stores payment data (merchant\_id, order\_id, amount, target\_currency).
- Returns a checkout link and widget token.

#### 2.2.3 Fiat Payment Integration:

- Integrate **Flutterwave** (cards, transfers) and **OPay** for NGN collections and payouts.
- Receive verified webhooks to confirm payment status.

#### 2.2.4 Crypto Payment Integration:

- Provide deposit address or WalletConnect for USDT/ETH payments.

- Detect on-chain confirmations via blockchain listener.

#### 2.2.5 Settlement Engine:

- Handles currency conversion using Uniswap or 1inch API.
- Disburses merchant funds:
  - **USDT** → sends from liquidity vault via smart contract.
  - **USD/NGN** → triggers payout via OPay or Flutterwave API.

#### 2.2.6 Liquidity Vault (Smart Contract):

- Holds USDT for merchant payouts.
- Supports rebalancing via Uniswap router calls.
- Controlled by multisig or authorized relayer.

#### 2.2.7 Webhooks and Reconciliation:

- Verify and record all provider webhooks.
- Update transaction status: PENDING → PAID → SETTLED.

#### 2.2.8 Merchant Dashboard:

- Displays transactions, statuses, balances, and payout settings.
- Allows CSV exports and manual payout requests.

### 2.3 Non-Functional Requirements

- **Performance:** Support up to 500 concurrent checkouts with <3s API latency.
- **Security:** JWT authentication, webhook signature verification, and KMS key storage.
- **Scalability:** Queue-based job processing for swaps, payouts, and confirmations.
- **Auditability:** Every transaction logged with tx hash or provider ref.



- **Availability:** Minimum 99.5% uptime during MVP testing.

## 2.4 Acceptance Criteria (MVP)

- A merchant can create a payment intent and a customer can pay in **NGN or USD**, resulting in a **USDT or USD** settlement.
- A customer can pay in **USDT or ETH**, resulting in a **USD, NGN, or USDT** payout based on merchant preference.
- Webhooks and on-chain confirmations correctly update transaction status.
- Transactions are recorded and viewable in the merchant dashboard.

## 2.5 Technology Stack

Layer	Technology
Frontend	React.js (Checkout Widget)
Backend	Node.js / Express.js
Database	PostgreSQL / Supabase
Crypto Integration	Uniswap / 1inch API
Payment Rails	Flutterwave, OPay
Blockchain	Polygon / BSC
Smart Contract	Solidity (USDT Vault)
Queue System	Redis / BullMQ
Hosting	Render / Vercel