MUSD - Mezo Hackathon Presentation

Bitcoin-Native Stablecoin Payment System

Slide 1: Title Slide

💵 MUSD

Bitcoin-Native Stablecoin on Mezo

Enabling Bitcoin holders to transact with USD stability

Mezo Hackathon Submission

🔗 GitHub: https://github.com/fapulito/musd

🌐 Deployed on Vercel

⚡ Powered by Mezo Passport

Slide 2: The Problem

🚨 The Challenge

Bitcoin holders face a critical dilemma:

For Users:

- 📉 Bitcoin's volatility makes everyday payments impractical
- 🔄 Converting to stablecoins means leaving the Bitcoin ecosystem
- 🔐 New wallets and seed phrases create friction and security risks
- 💸 High fees and slow settlement on traditional rails

For Merchants:

- 💰 Want Bitcoin exposure but need price stability
- ⏱️ Can't accept volatile assets for goods/services
- 🌍 Miss out on Bitcoin holder market (millions of users)
- 💳 Traditional payment processors charge 2-3% fees

The Gap: No Bitcoin-native stablecoin solution exists

Slide 3: Our Solution

✨ MUSD: The Solution

Sign with Bitcoin, Transact with Stablecoins

How It Works:

```
1. Connect Bitcoin Wallet
   └─> Via Mezo Passport (no new accounts!)

2. Mezo Creates Smart Account
   └─> Account abstraction on Matsnet

3. Sign with Bitcoin Wallet
   └─> User maintains custody & control

4. Smart Account Executes
   └─> MUSD transfers on Matsnet
```

Key Innovation:

MUSD- First Wallet-Native stablecoin Launched by a Self-Custodial Wallet

Slide 4: Technology Stack

🔧 Built with Mezo

Deep Integration with Mezo Ecosystem

Mezo Passport SDK (`@mezo-org/passport@0.12.0`)

```
// Bitcoin wallet authentication
const { btcAddress, btcBalance } = useBitcoinAccount()

// Send MUSD with Bitcoin signature
const { sendTransaction } = useSendTransaction()
await sendTransaction(MUSD_TOKEN_ADDRESS, 0n, data)
```
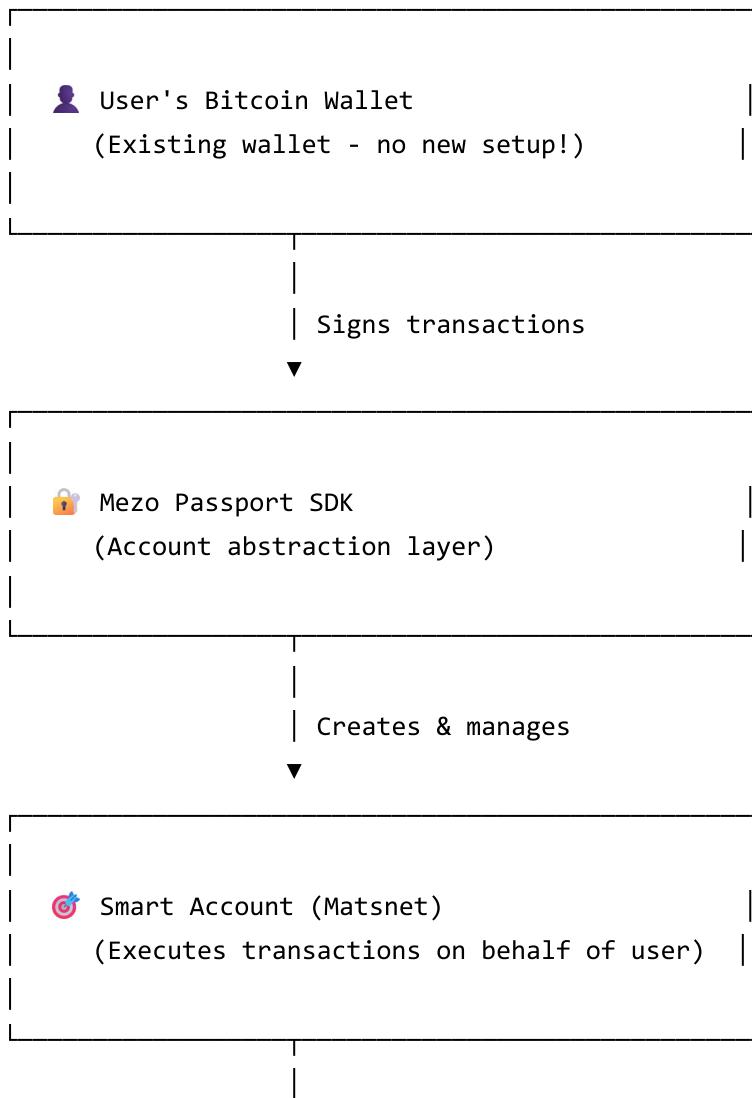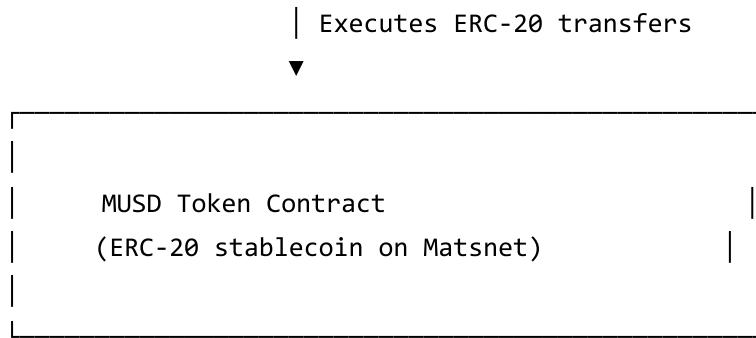
Tech Stack:

- **Blockchain:** Solidity smart contracts on Matsnet
- **Frontend:** React 19 + TypeScript + Vite
- **Integration:** Mezo Passport + Wagmi + Viem
- **Backend:** Node.js + Express payment service
- **Deployment:** Vercel + Railway

Slide 5: Architecture

🏗️ System Architecture

```
┌─────────────────────────────────────────────┐
│                                               │
│  👤  User's Bitcoin Wallet                    │
│      (Existing wallet - no new setup!)        │
│                                               │
└─────────────────────────────────────────────┘
                    │
                    │ Signs transactions
                    ▼
┌─────────────────────────────────────────────┐
│                                               │
│  🔐  Mezo Passport SDK                        │
│      (Account abstraction layer)              │
│                                               │
└─────────────────────────────────────────────┘
                    │
                    │ Creates & manages
                    ▼
┌─────────────────────────────────────────────┐
│                                               │
│  🎯  Smart Account (Matsnet)                  │
│      (Executes transactions on behalf of user)│
│                                               │
└─────────────────────────────────────────────┘
                    │
```

```
                    │ Executes ERC-20 transfers

        ▼
  ┌──────────────────────────────────────────┐
  │                                          │
  │                                          │
  │     MUSD Token Contract                  │
  │     (ERC-20 stablecoin on Matsnet)       │
  │                                          │
  │                                          │
  └──────────────────────────────────────────┘
```

Result: Bitcoin wallet controls USD-stable value seamlessly

Slide 6: Key Features

🌟 What We Built

For Users

- 🔐 **Bitcoin Wallet Auth** - Use existing wallet, no seed phrases
- 💰 **USD Stability** - Transact without volatility risk
- ⚡ **Instant Transfers** - Fast transactions on Matsnet
- 🔒 **Self-Custody** - Maintain control of your Bitcoin wallet
- 🔢 **Simple UX** - Connect, send, done

For Merchants

- 💵 **Stable Settlement** - Accept Bitcoin-backed payments in USD
- 🔌 **Easy Integration** - REST API and payment links
- 📊 **Real-Time Tracking** - Monitor transactions and balances
- 🌐 **Global Reach** - Access Bitcoin holder market
- 💸 **Low Fees** - Cheaper than traditional processors

For Developers

- 📚 **Complete Docs** - Deployment guides and API docs
- 🛠️ **Modern Stack** - React, TypeScript, Mezo SDK
- 🧪 **Test Suite** - Comprehensive smart contract tests
- 🚀 **Easy Deploy** - One-click Vercel + Railway setup

Slide 7: Hackathon Deliverables

✅ What We Delivered

Complete Production-Ready System

1. Smart Contracts ✅

- ERC-20 MUSD token deployed on Matsnet

- Comprehensive Hardhat test suite
- Deployment scripts and documentation

2. React dApp ✅

- Mezo Passport integration (`useBitcoinAccount` , `useSendTransaction`)
- Custom hooks for wallet management (`useWalletInfo` , `useSendMUSD`)
- Responsive UI with Tailwind CSS
- Real-time balance tracking (Bitcoin + Matsnet)

3. Payment Service ✅

- Node.js + Express backend
- Transaction monitoring and webhooks
- Payment link generation
- Merchant API

4. Documentation ✅

- 📚 Complete deployment guides (Vercel, Railway, Boar, Spectrum)
- 🚀 Quick start guide (5-minute setup)
- 🐛 Troubleshooting documentation
- 📖 System architecture overview

5. Production Infrastructure ✅

- Vercel deployment configuration
- Railway backend hosting
- Environment management
- CI/CD ready

Slide 8: Demo Flow

🎬 User Experience

Step-by-Step Demo

1️⃣ Connect Wallet

```
User clicks "Connect Bitcoin Wallet"
→ Mezo Passport opens
→ User authenticates with existing Bitcoin wallet
→ No new accounts, no seed phrases!
```

2️⃣ View Balances

```
Dashboard shows:
→ Bitcoin wallet address & BTC balance
→ Matsnet smart account address
→ MUSD token balance
→ Real-time updates
```

3️⃣ Send MUSD

User enters:

→ Recipient address

→ Amount in MUSD

→ Clicks "Send"

4️⃣ Sign & Execute

→ Bitcoin wallet prompts for signature

→ User signs with Bitcoin wallet

→ Smart account executes transfer on Matsnet

→ Transaction confirmed in seconds

5️⃣ Merchant Receives

→ Merchant receives MUSD (USD-stable)

→ No volatility risk

→ Instant settlement

→ Lower fees than traditional processors

Slide 9: Market Opportunity & Roadmap

📈 Growth Strategy

Market Opportunity

Target Market Size

- **Bitcoin Holders:** 50M+ globally with $1T+ market cap
- **E-commerce:** $5.7T global market (2023)
- **Stablecoin Market:** $150B+ and growing
- **Payment Processing:** $2T+ annual volume

Our Niche

Bitcoin holders who want to spend without volatility

Merchants who want Bitcoin exposure with USD stability

Roadmap

Q1 2025 - MVP Launch 🚀

- ✅ Matsnet deployment (DONE)
- ✅ Mezo Passport integration (DONE)

- 🔄 Production deployment (IN PROGRESS)
- 🎯 10-20 beta merchants
- 🎯 $10K transaction volume

Q2 2025 - Mainnet & Growth 📊

- Deploy to Mezo mainnet
- 100+ merchants onboarded
- Payment plugins (WooCommerce, Shopify)
- Multi-currency (MEUR, MGBP)
- $100K monthly volume

Q3 2025 - Scale 🌍

- Recurring payments & subscriptions
- Mobile app (React Native)
- Point-of-sale integrations
- 1,000+ merchants
- $1M monthly volume

Q4 2025 - Enterprise 🏢

- Enterprise API
- Multi-signature support
- Compliance tools
- 10,000+ merchants
- $10M monthly volume

Slide 10: Why MUSD Wins

🏆 Unique Value Proposition

The First Bitcoin-Native Stablecoin

What Makes Us Different

Feature	Traditional Stablecoins	MUSD
Wallet	New Ethereum/other wallet	Existing Bitcoin wallet ✅
Seed Phrase	New phrase to manage	No new phrases ✅
Ecosystem	Leave Bitcoin	Stay in Bitcoin ✅
Signing	Ethereum signature	Bitcoin signature ✅
Integration	Complex setup	Mezo Passport ✅

Key Advantages

1. **No Friction** - Use existing Bitcoin wallet, no new setup
2. **Bitcoin-Native** - Stay in the Bitcoin ecosystem
3. **Mezo-Powered** - Leverages cutting-edge account abstraction
4. **Production-Ready** - Complete system with docs and deployment
5. **Real Use Case** - Solves actual problems for users and merchants

The Vision

Enable Bitcoin to power the future of payments

By combining Bitcoin's security and adoption with stablecoin's price stability, MUSD unlocks Bitcoin's potential as a medium of exchange.

Thank You! 🙏

MUSD - Bitcoin-Native Stablecoin on Mezo

Built for the Mezo Hackathon

📧 Contact: djanderson@duck.com

🔗 GitHub: https://github.com/fapulito/musd

🌐 Demo: https://musd.california.vision

📊 Docs: https://github.com/fapulito/musd

Questions?

We're excited to discuss:

- Technical implementation details
- Mezo integration approach
- Market strategy and growth plans
- Partnership opportunities

Built with ❤️ *for the Mezo ecosystem*