



Project Proposal: Private Micropayments for Digital Content



1. Project Overview

Title: Private Micropayments for Digital Content **Tagline:** Unlock content with **sub-cent, private payments** using Starknet and Bitcoin.

Problem

Most digital content [articles, music, games, videos] is locked behind subscriptions or ads. This excludes millions of users who:

- Don't want to commit to monthly subscriptions.
- Only want to pay small amounts for specific content.
- Care about **privacy** and don't want their payments tied to their identity.

Traditional payment rails [Visa, PayPal, mobile money] cannot process **sub-cent global transactions** efficiently. Fees kill the model.

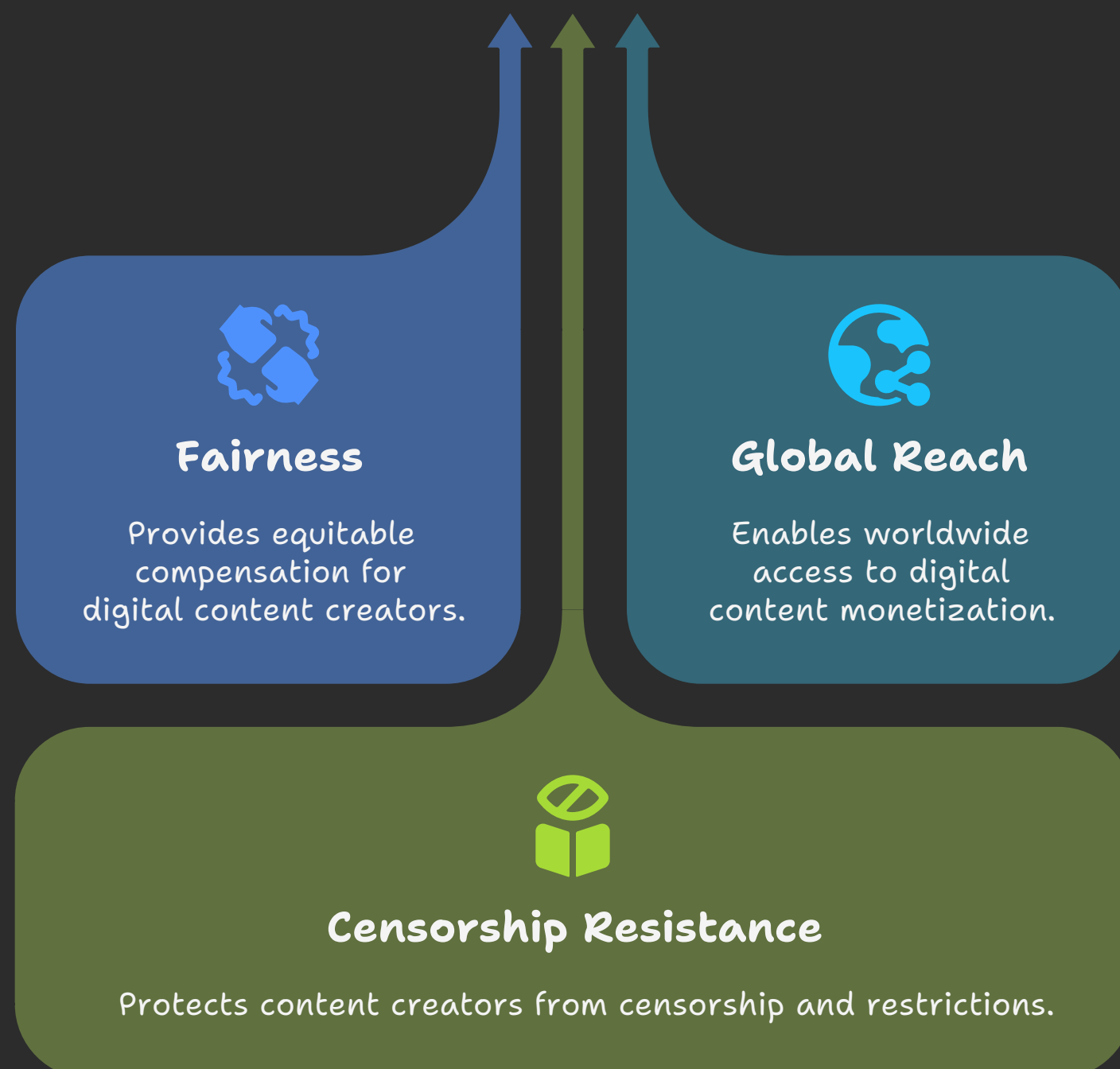
Solution

We're building a **mobile-first dApp** that enables users to unlock digital content with **private, sub-cent payments**.

- Pay **per read / per view / per play** with as little as \$0.001.
- Payments are **private** and unlinkable.
- Works with **Starknet tokens** and **Bitcoin (via Atomiq/Xverse)**.
- Creators get instant micropayments into their wallet.

This makes monetization **fair, global, and censorship-resistant**.

Pillars of Digital Monetization





2. Key Features

1. Pay-Per-Content

- Unlock an article, video, or game session for a micro-payment.

2. Private Payments

- Use privacy-preserving tools (Cashu or Wootzapp API) to unlink transactions.

3. Bitcoin + Starknet Integration

- Pay with BTC (Xverse / Atomiq swap).
- Pay with STRK/ETH (Starknet).

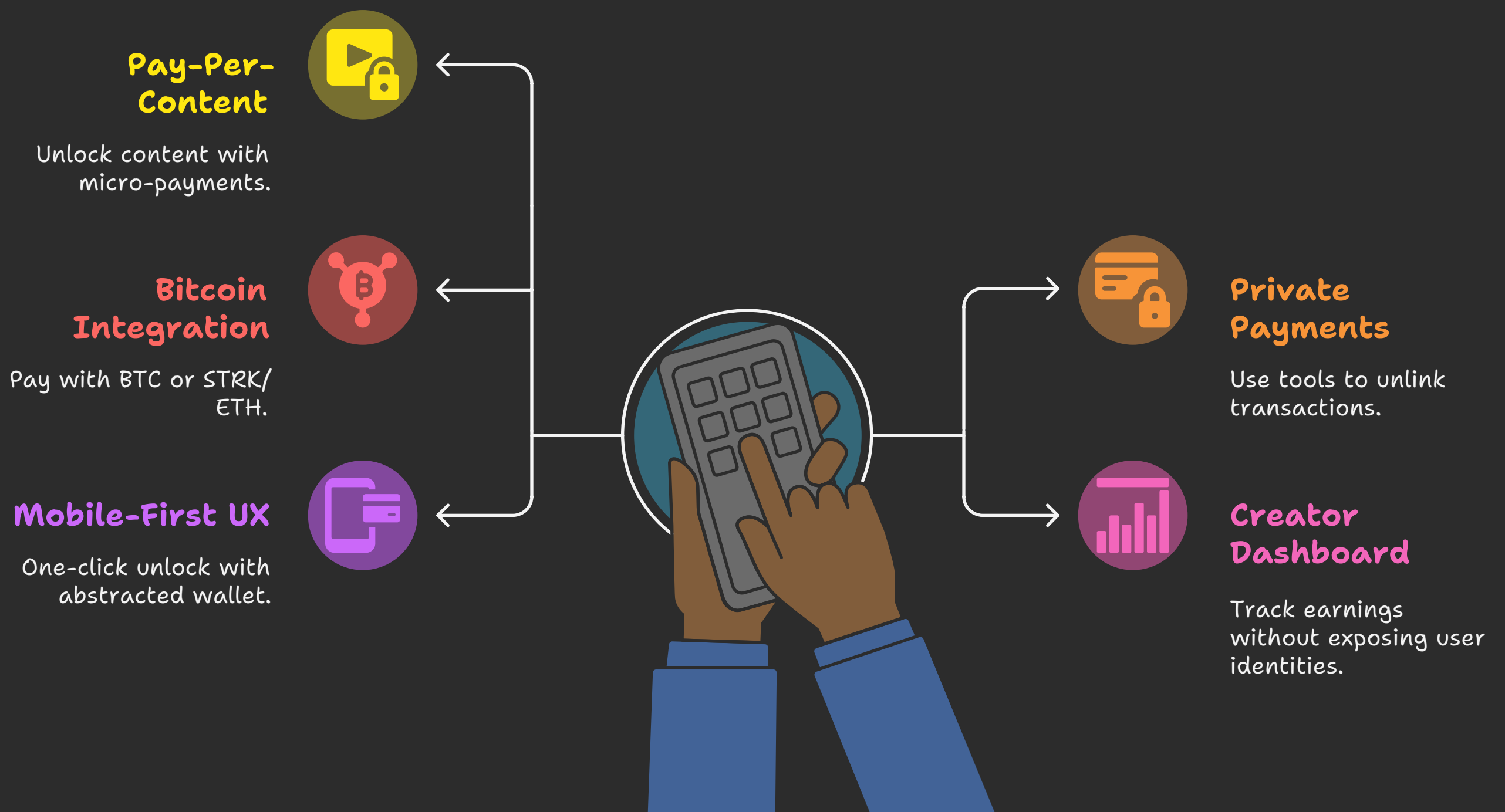
4. Creator Dashboard

- Track earnings (aggregate).
- No exposure of user identities.

5. Mobile-First UX

- One-click unlock.
- Optional email/social login → wallet abstracted away.

Payment System Features



Made with Napkin




3. Hackathon Prize Tracks Fit

- **Next-Gen Payments (Starknet + Chipi Pay)** → Sub-cent payment rails.
- **Mobile-first dApps (Starkware)** → UX-first design.
- **Privacy & Identity (Starkware, Fat Solutions, Wootzapp)** → Private micropayments.

- **Bitcoin Unleashed** [Xverse, Atomiq, Vesu, Troves/Endur] → BTC → Starknet conversion.
- **Open Track** → Broad content monetization use case.

Starknet Ecosystem



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This project touches **5 prize categories** at once.



4. Technical Architecture

Frontend [Next.js + Starknet.js]

- User visits content page → locked view.
- Click **Pay 0.001 STRK / 100 sats** → trigger smart contract call.
- Once confirmed, content unlocks.

Smart Contracts [Cairo]

- PaymentManager contract:
 - Accepts micro-payments.
 - Emits event ContentUnlocked[user, contentId].
- [Optional] integrate Chipi Pay SDK for off-chain fiat bridging.

Privacy Layer

- Use **Cashu e-cash** [BTC micropayments with privacy].
- Or Wootzapp's **privacy API credits** to anonymize data flows.

Bitcoin Integration

- **Xverse wallet** for BTC payments.
- **Atomiq swap**: BTC → STRK → unlock content.

Backend [Node.js / Express]

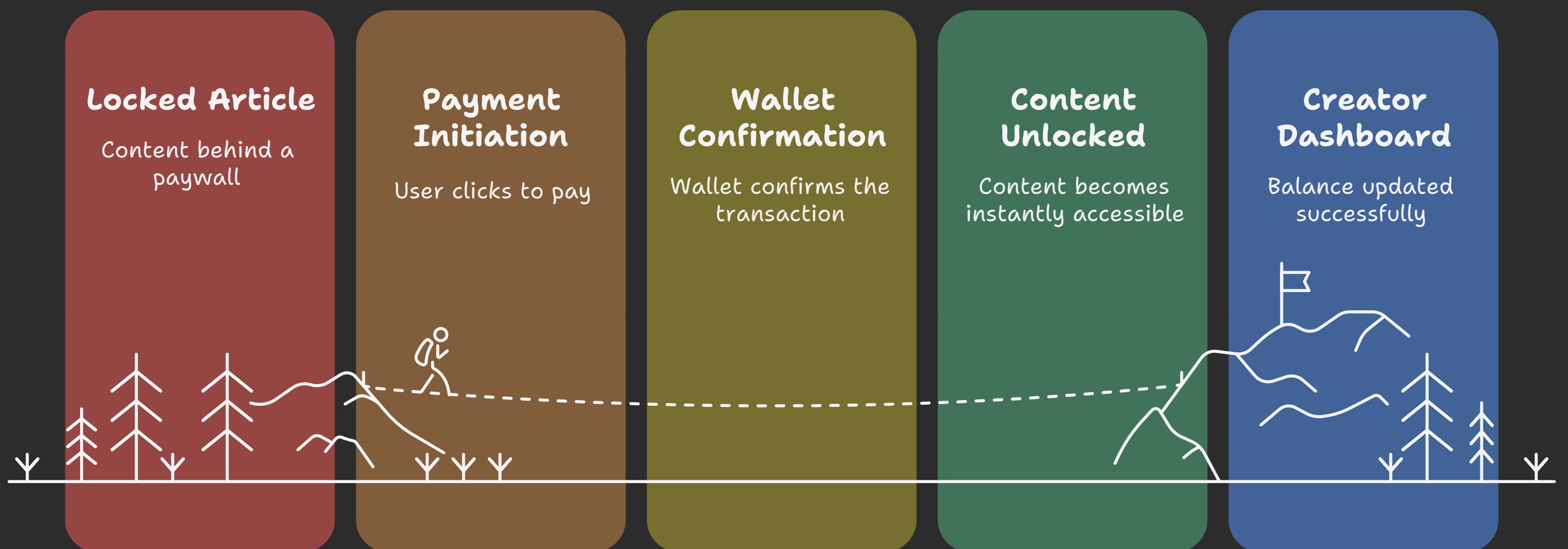
- Minimal backend [optional].
- Store metadata: which content is locked/unlocked.
- Handle email/social login [if added].



5. Demo Flow (3-Minute Video)

1. User visits a **locked article**.
2. Clicks **Pay 0.001 STRK**.
3. Wallet confirms payment [or BTC payment via Xverse].
4. Content instantly unlocks.
5. Switch to **Creator Dashboard** → show balance updated.

Unlocking Content with STRK



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6. Roadmap

Week 1: Foundations

- Setup repo [Next.js + Starknet.js].
- Build simple locked/unlocked content UI.
- Cairo smart contract: basic `payToUnlock[contentId]` logic.

Week 2: Payments & Privacy

- Integrate Starknet testnet payments.
- Add privacy layer [Cashu / Wootzapp].

Week 3: Bitcoin Integration

- Add BTC payment option [Xverse wallet].
- Add Atomiq BTC→STRK swap flow.

Week 4: Final Polish

- Add Creator Dashboard [earnings, stats].
- Polish UX [mobile-first].
- Record demo video + prepare pitch deck.

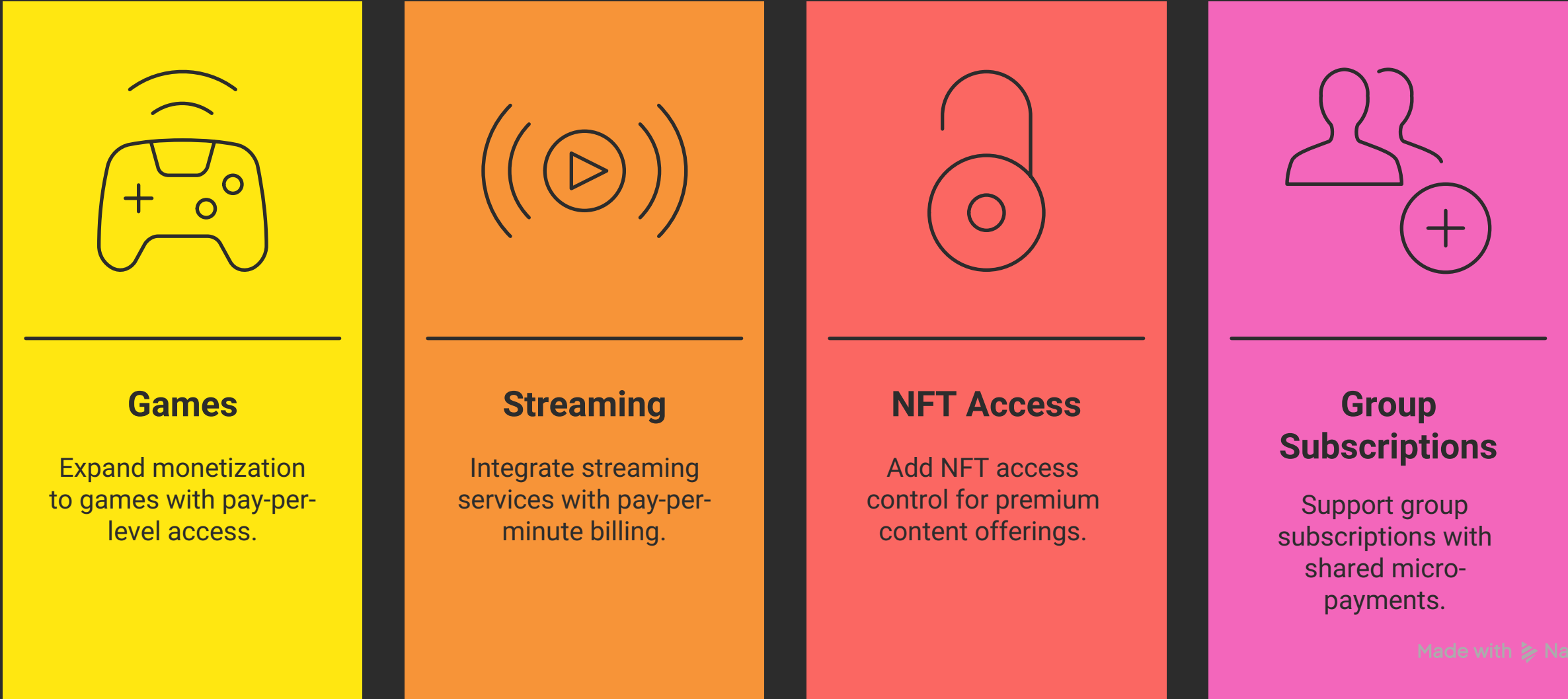


7. Future Potential

- Expand to games [pay-per-level].

- Integrate streaming (pay-per-minute).
- Add NFT access control for premium content.
- Support group subscriptions (shared micro-payments).

Monetization Strategies

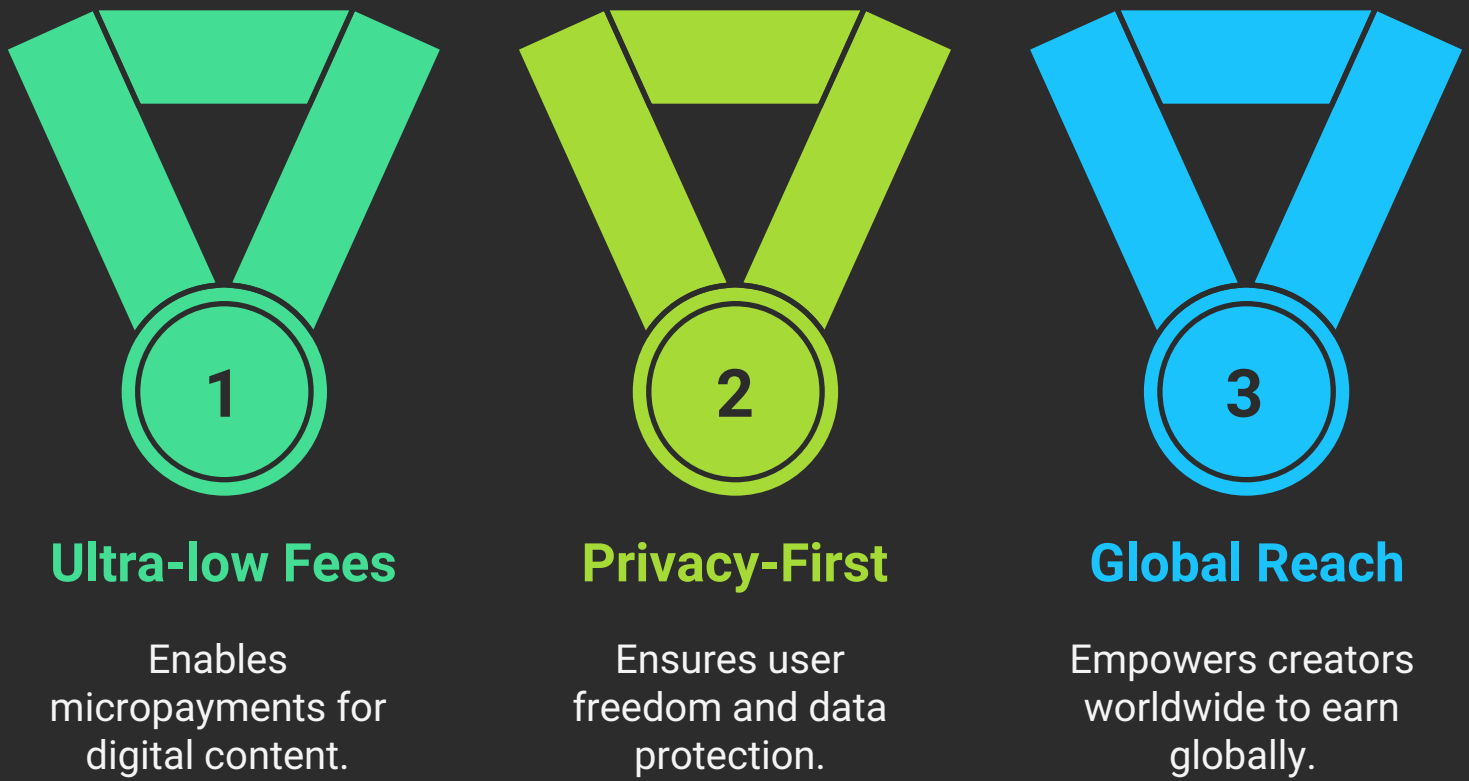


8. Why This Matters

This project shows the **real power of Starknet + Bitcoin**:

- **Ultra-low fees** → micropayments possible.
- **Privacy-first** → user freedom.
- **Global reach** → creators everywhere can earn.
- **Mobile-first UX** → usable by anyone, not just crypto natives.

Key Benefits of Private Micropayments



It's not just a hackathon demo — it's the foundation for a new digital economy where **every click can be monetized fairly**.