

# Innovative tgBTC Projects for BTCfi Hackathon 2025

## Idea 1: tgBTCPay – Bitcoin Payment Gateway Mini-App

- **Description:** A Telegram Mini-App that lets merchants and users send/receive Bitcoin (as tgBTC) seamlessly in chat. Merchants generate tgBTC payment requests (invoices) within Telegram; customers connect their TON wallet via TON Connect and pay in one click. The app instantly locks up the tgBTC in a smart contract (Tact) escrow and releases it once delivery is confirmed. This enables real-time, low-fee Bitcoin payments directly in Telegram without third-party custodians <sup>1</sup> <sup>2</sup>.
- **Target Tracks:** Best Use Case (tgBTC payment in Telegram) and One-click (streamlined payment UX).
- **Technical Architecture:**
- **Telegram Mini-App UI:** JavaScript/TypeScript frontend running as a Telegram Mini-App, leveraging mini-app features (e.g. push notifications, integrated payments) <sup>3</sup>.
- **Wallet Integration:** Uses TON Connect (mandatory for Telegram apps <sup>4</sup>) to link user's TON wallet. This allows fetching the user's tgBTC jetton wallet and balance and signing transactions.
- **Smart Contract (Tact):** A Tact-written contract holds invoice data and escrow logic. When a payment is initiated, the user's wallet sends tgBTC to this contract. The contract verifies payment and triggers an on-chain callback (or notification) to the merchant. (Tact is suited for complex smart contracts and fast prototyping <sup>5</sup>.)
- **TONX API Usage:** Use TONX API endpoints to simplify integration: e.g. **Get tgBTC Wallet Address by Owner** (to find the mini-app's or user's tgBTC jetton address), **Get tgBTC Balance** (to verify payment), and **Send tgBTC** (to trigger payments) <sup>6</sup>. For example, before sending an invoice, the app checks merchant's tgBTC balance via `getBalance`, and after payment it reads transfers via `getTransfers`.
- **Innovative Edge:** By bridging Bitcoin's liquidity into Telegram, tgBTCPay leverages Bitcoin's trust and TON's speed/low fees <sup>2</sup>. It offers an **ultrafast, peer-to-peer payment method**: the user pays directly in tgBTC (pegged 1:1 to BTC) without exchanges or custodians <sup>1</sup>. The Telegram Mini-App UI and TON Connect make payments as easy as one click, vastly improving Bitcoin usability. Using TONX API and Tact smart contracts under the hood ensures secure, automated settlement. As a bonus, merchants can automatically convert received tgBTC to stablecoins or fiat via integrated DEXs, while users earn loyalty TG rewards (e.g. via smart-contract logic). This combines novel tgBTC use (native Bitcoin payments in chat) with proven finance patterns (escrow/payments).

## Idea 2: tgBTC Lending Protocol

- **Description:** A DeFi lending platform on TON where users deposit tgBTC as collateral to borrow USD $\mathbb{F}$  (USDT on TON) or Toncoin, or earn interest on their tgBTC. Think of a Bitcoin-backed loan market within Telegram. For example, a user locks 1 tgBTC into the contract and can borrow up to 50% of its USD value. The protocol handles liquidations if BTC price moves, using on-chain price oracles. Alternatively, users can deposit tgBTC to earn yield (interest paid by borrowers). This unlocks Bitcoin liquidity for DeFi without selling it.

- **Target Tracks:** Best Protocol (novel lending protocol) and Best Use Case (leveraging tgBTC in DeFi).
- **Technical Architecture:**
- **Smart Contracts (Tact):** Core lending logic is a set of Tact contracts: *Collateral Pool* (holds deposits of tgBTC and tracks borrow shares), *Loan Manager* (issues stablecoin loans against tgBTC collateral, handles liquidations), and *Price Oracle* (feeds BTC/USD price from Chainlink or a Telegram-fed oracle). Tact's safety and expressiveness make it ideal for complex financial contracts <sup>5</sup>.
- **Telegram Mini-App UI:** A user-friendly interface where users connect via TON Connect, deposit/withdraw tgBTC, view collateral health and borrow limits. Users can stake their tgBTC in one click and borrow or repay with a couple of taps. Notifications can alert them to liquidation risk via Telegram's push feature.
- **TONX API Usage:** The app calls TONX API to get each user's tgBTC jetton balance and transaction history <sup>6</sup>. For example, it uses **Get tgBTC Balance** to show a user's available collateral, and **Get tgBTC Transfer Payload** to generate payloads for depositing tgBTC into the lending contract. It might also use **Get tgBTC Master Addresses** to locate contract addresses. When a user deposits tgBTC, the mini-app creates and signs a transaction (via TON Connect) to send tgBTC to the lending pool.
- **Integration with Stablecoin:** Use TON blockchain's USD $\mathbb{T}$  for loans. TONX or other APIs can fetch USD $\mathbb{T}$  balances and allow sending USD $\mathbb{T}$  to borrowers. (TON's high throughput makes USD $\mathbb{T}$  operations fast <sup>7</sup>.)
- **Innovative Edge:** This protocol brings **Bitcoin's collateral value** into TON's DeFi. Unlike centralized loans, it uses trustless smart contracts: "just you, TON, and Telegram" as the blog describes for tgBTC <sup>8</sup>. The integration with Telegram Mini-Apps means notifications and user onboarding can happen in-app, demystifying DeFi. Unique bonus features could include AI-driven risk scoring: an AI model analyzes market volatility and suggests safe collateral ratios, alerting users via chat. By leveraging tgBTC (fast BTC on TON) and Tact's secure contracts, this idea offers a **lightning-fast, Bitcoin-backed lending market** that is buildable within a hackathon (using open-source TON DeFi libraries for reference).

### Idea 3: Telegram Crypto Advisor (AI Bot)

- **Description:** An AI-powered financial advisor running as a Telegram Mini-App. Users chat with the bot to learn about tgBTC, get market insights, and execute trades. For example, a user asks, "How can I use my Bitcoin in Telegram?" The bot can explain tgBTC, show current APYs for staking, or even forecast small price trends using AI. Crucially, once the user connects their wallet (TON Connect), the bot can perform live analysis of their holdings and suggest personalized strategies (e.g. "You have 0.5 BTC; consider staking it in our vault for 5% APR"). The user can then approve transactions directly through the chat.
- **Target Tracks:** Best Onboarding (helps new users adopt tgBTC) and Best Use Case (tgBTC use + Telegram chat).
- **Technical Architecture:**
- **Telegram Chatbot UI:** A conversational interface using a Telegram bot or mini-app, built with Node.js/React. This interface supports rich messages, buttons, and interactive forms. It uses TON Connect to authenticate the user's wallet.
- **AI Integration:** Incorporate an LLM (e.g. via OpenAI API) fine-tuned on crypto knowledge, plus possibly on-chain data. The bot can answer FAQ about tgBTC, explain benefits, or interpret user queries. For example, the LLM can parse "compare staking vs lending my BTC", and respond with a comparison, citing the current APRs from our lending protocol (Idea 2).

- **Data and Analytics:** The app fetches real-time tgBTC metrics via TONX API (e.g. balance and token supply) and external sources (market prices via CoinGecko API) to inform the AI's answers. For example, to answer "What yields can I get?", it retrieves current stats from the lending contract or vault.
- **Transaction Execution:** When the user agrees with an AI suggestion, the mini-app uses TONX **Send tgBTC** and TON Connect to execute the transaction in one click <sup>9</sup> <sup>6</sup> .
- **Innovative Edge:** This idea uniquely combines **AI and Blockchain**: the assistant demystifies tgBTC and TON finance for users in natural language, greatly lowering the onboarding barrier. By operating entirely in Telegram, it "brings Bitcoin into your pocket" as TON teleporter promises <sup>1</sup> . The AI bot can, for instance, detect that the user's tgBTC balance is high and suggest they deposit it into a vault or set up DCA (Idea 4) – executing with a simple button press. It also uses TON Connect (per Telegram's requirement <sup>4</sup> ) so the user's keys never leave their device. This creates a compelling **guided onboarding experience**: new crypto users in a Telegram group can talk to the bot, ask about tgBTC, and immediately start using DeFi apps, making it a strong candidate for the Best Onboarding track.

## Idea 4: tgBTC AutoInvest – One-Click Diversified Portfolio

- **Description:** A one-click investment mini-app that helps users diversify their tgBTC holdings. Upon connecting their wallet, a user can allocate an amount of tgBTC to various DeFi positions with a single action. For example, 50% might be staked in a tgBTC liquidity pool, 30% lent out on the lending protocol (Idea 2), and 20% converted to stablecoin and staked in a yield farm. The user sets allocation preferences (or uses AI defaults) and the app executes all the trades in one transaction ("one-click"). The portfolio is automatically rebalanced monthly.
- **Target Tracks:** Best One-click (streamlined investment for novices) and Use Case.
- **Technical Architecture:**
- **UI/UX:** Telegram Mini-App where users set up an "investment plan" by choosing targets or a risk profile. The mini-app shows potential APYs and a "Invest Now" button.
- **Smart Contract (Tact):** A Tact contract called *AutoInvest Vault* that, when funded with tgBTC, internally splits and routes funds according to the user's chosen allocation. For instance, it might automatically swap part of tgBTC to USD₯, send it to a staking contract, and deposit the rest into the loan pool. This contract also holds user balances and enforces rebalancing logic.
- **TON Connect & TONX:** Use TON Connect to let the user sign the funding transaction. Use TONX API to **generate payloads** for multi-step transactions: e.g. create a payload to call the vault contract with the user's tgBTC amount and allocation vector <sup>6</sup> . Also use **Get tgBTC Balance** to confirm deposit and track vault status.
- **Automation:** The vault contract could integrate with TON's scheduling or use a keepers-like service to trigger rebalances (or just rely on users to manually rebalance via the app).
- **Innovative Edge:** By bundling multiple steps into one contract call, tgBTC AutoInvest makes advanced strategies accessible to everyone (true "one-click" investing). It leverages TON's fast transactions to split and invest funds instantly, a process that would take many clicks or complex trades on other chains. As TON Mini-Apps support integrated payments <sup>10</sup> , the user experience is seamless (no need to copy-paste addresses). Unique feature: since TGBot mini-apps can push notifications, the app can alert the user if their portfolio drifts or if a yield curve changes. Additionally, using an AI recommender, the app can suggest optimal splits based on market conditions. For tgBTC integration, it simply requires the user to fund the AutoInvest contract with

tgBTC, and the contract handles the rest. This showcases a **innovative one-click DeFi product** on TON's Bitcoin, making it perfect for the hackathon's "Best One-click" category.

## Idea 5: AI-Powered tgBTC Portfolio Manager (Community Vault)

- **Description:** A community-driven tgBTC investment vault that combines AI optimization with group governance. Community members (e.g. a Telegram group or DAO) pool tgBTC into a shared vault. An AI agent analyzes market data and on-chain signals to allocate the pool into different strategies (lending, liquidity provision, staking TON stablecoins, etc.) in order to maximize yield and minimize risk. Members track performance and can vote on strategy changes via the Telegram Mini-App.
- **Target Tracks:** Best Use Case and Best Protocol (novel algorithmic vault).
- **Technical Architecture:**
  - **Smart Contract (Tact):** A **Vault Contract** holds all deposited tgBTC. It supports adding/removing liquidity and rebalancing. The vault exposes admin functions that can only be called by an on-chain "Strategy Manager" (see below).
  - **AI Strategy Manager:** Off-chain ML model (integrated via a backend) that takes market inputs (prices, volatility, liquidity pools) and computes optimal allocations. For example, it might decide "lend 40% tgBTC, LP 30% in a BTC-toncoin pool, swap 30% to USD₯ and stake". Every day or week, it outputs a rebalancing plan. The Telegram Mini-App shows these analytics to users.
  - **Governance:** Tokenized voting (could be based on deposited amounts or a governance token). Users can approve or reject AI-suggested strategies. Voting happens in-app using TON Connect to sign ballots.
  - **Execution:** Once a strategy is approved, the vault contract executes the rebalancing trades on TON using existing DeFi primitives (via TONX API to orchestrate transfers and swaps). The AI manager triggers contract calls by signing transactions (or via a multisig that releases on vote).
  - **TONX API Usage:** To implement strategy execution, the backend uses TONX to calculate payloads for swapping or lending steps (e.g. converting tgBTC to USD₯ on a DEX, then staking) <sup>6</sup>. TONX's **Get tgBTC Holders** could track pool size and participant contributions.
  - **Innovative Edge:** This project **mixes DeFi, AI, and community governance** on tgBTC. It creates a real-world scenario where a Telegram community actively manages Bitcoin assets using smart contracts and AI insights. By pooling tgBTC, even small holders can access large-scale strategies. The AI-driven approach is unique: for example, the system could use reinforcement learning to adapt to market cycles, giving a competitive edge. All interactions happen in Telegram, leveraging mini-app UIs and TonConnect (compliant with Telegram's wallet mandate <sup>4</sup>). This idea highlights tgBTC in collective finance, making it a strong protocol entry. As the TONX docs emphasize easy tgBTC operations <sup>6</sup>, the app relies on those APIs to handle deposits and allocations safely. The fusion of AI (for market timing), a TON native pool, and Telegram's social features makes it a standout, innovative use case for BTCfi on TON.

**Sources:** These ideas build on TON's Teleport BTC (tgBTC) functionality and ecosystem tools. TON's official blog describes tgBTC's role in bringing Bitcoin to Telegram mini-apps <sup>1</sup>. The TONX API provides ready-made endpoints for managing tgBTC (balances, transfers, metadata) that we plan to use <sup>6</sup> <sup>9</sup>. Telegram Mini-Apps require TON Connect for wallet integration <sup>4</sup> <sup>11</sup>, which our apps will use to connect user wallets. Tact (a TypeScript-like smart contract language for TON) will be used for secure on-chain logic <sup>5</sup>. Together these components enable the above projects.

1 8 Unlocking the future of Bitcoin with TON Teleport BTC: A new era of trustless interoperability

<https://blog.ton.org/unlocking-the-future-of-bitcoin-with-ton-teleport-btc>

2 6 9 TON BTCfi Kit - tgBTC APIs All You Need To Know

<https://docs.tonxapi.com/docs/ton-btcfi-kit-tgbtc-api>

3 10 Telegram Mini Apps

<https://ton.org/en/mini-apps>

4 Telegram mandates TON Connect for all crypto wallets, sparking backlash

<https://cointelegraph.com/news/telegram-ton-wallet-mandate-crypto-mini-apps>

5 Tact language | The Open Network

<https://docs.ton.org/v3/documentation/smart-contracts/tact>

7 USDT processing | The Open Network

<https://docs.ton.org/v3/documentation/dapps/assets/usdt/>

11 What are Mini Apps? | The Open Network

<https://docs.ton.org/v3/guidelines/dapps/tma/overview>