



CROSSIFY LITEPAPER

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Introduction

Crossify is a cross-chain payment gateway that simplifies the process of making purchases using cryptocurrencies by automating conversions, calculations, and bridging across different blockchains.

This allows businesses and individuals to transact using their preferred cryptocurrencies, enhancing the flexibility and accessibility of the blockchain for real-world applications.

- Crossify is both a product and an example to show other protocols that crypto is not just a niche but also a very strong economic tool that can be used in real-world applications.
- We are meeting the needs of our customers by collapsing the number of actions one needs to complete a purchase using the blockchain.

Contents of this paper will include the needs of the blockchain customers and how we solve them.

Background/Problem

Blockchains were built after the 2008 financial crisis, and since then there has been a lot of progress. However, crypto currencies remain stuck in a cyclical cycle of buying and selling activity.

- In the legacy economics system, buying equity or converting currencies are subject to many penalties and there are strong prerequisites; crypto solves this but lacks the frictionless nature.
- Several projects have attempted to create an alternative to legacy payment systems, but they have not been able to make a real-world impact on crypto payments.
- There is a disconnect between everyday shopping systems such as cash and credit cards and people holding crypto currencies.

- Blockchains have not been efficient or cheap enough to meet the needs of both parties.
 - Crypto liquidation causes volatility, making it difficult for users to use crypto currencies to participate in the commodities market without the use of stablecoins.
 - Effectively using the blockchain requires experience with multiple tools; for example, one needs to interact with a DEX, bridge, blockchain explorer, and a wallet app to send tokens.
 - Users must calculate values from their native fiat currency into a crypto currency and keep track of price changes while trying to finalize a purchase.
 - Reading the backlog from the block explorers is tedious, and most retail users find it unintuitive, so they don't even bother using them.
 - User Interfaces were designed for power users, so most retail users cannot adopt them, limiting the adoption of these protocols to power users.
 - This lack of usability has hindered the adoption of crypto currencies in the real world as people are not able to use it in their day-to-day activities. Furthermore, most exchanges are not able to provide users with the liquidity they need to make a purchase. As a result, users are unable to make a purchase using crypto currencies without having to first liquidate their crypto assets. This creates a barrier for adoption, as users are not willing to go through the hassle of liquidating their assets in order to make a purchase.
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Solution

Crossify provides an innovative solution for bridging the gap between traditional financial transactions and the evolving world of cryptocurrencies. Its solution addresses the complexities, inefficiencies, and fragmented nature of transacting across various blockchain networks.

- **Cross-Chain Payments** Crossify enables any-2-any crypto transactions, allowing users to execute trades, exchanges, and payments across different blockchain networks. It allows any entity to accept multiple cryptocurrencies as payment, thereby reaching a larger customer base.
- **Unified Platform** Crossify provides a single platform for accessing and transacting across multiple chains, increasing efficiency, and saving time.
- **Secure and User-Friendly** It offers a secure, frictionless, and user-friendly transaction experience, enabling even those new to cryptocurrencies to navigate easily.
- **Flexible Settlements** Any entity can accept payments in multiple cryptocurrencies and choose to receive settlements in either their preferred crypto while still using their preferred fiat currency as numerator, providing flexibility in managing their finances.
- **Tools for Businesses and Developers** Crossify offers comprehensive services for businesses, including payment links, data analytics, and plugins for e-commerce and accounting software. It also provides an API and SDK for developers to build applications on top of Crossify.
- **Transparent Tracking** Crossify provides hassle-free payment tracking across all chains and tokens, ensuring businesses can always have a clear understanding of their transaction status.

By providing the needs specified above, Crossify enables any entity to participate in the real world economy without the use of any legacy economic institution, thus removing entry barriers and legacy conversion/transaction penalties.

Lasting

Crossify takes a strong stance to be community-oriented and self-sufficient. The Core Team and Contributors are expected to build a solution that will work for decades without the need for major interventions.

Features

To bridge the gap between the traditional economic system and the blockchain, Crossify provides a number of key features.

- **Multiple Payment Types:** Offers three types of payments - Point of Sale, Product, and Donation.
- **Transaction History:** Keeps a detailed log of all transactions, with live feedback, for easy reference and tracking.
- **Cross-Chain Payments:** Ability to execute payments across different blockchain networks, covering all major EVM and potentially non-EVM blockchains.
- **Crypto-Fiat Calculation:** Automates the calculation process between cryptocurrencies and fiat currencies.
- **Token Swap:** Enables real-time swapping of cryptocurrencies during transactions.
- **Transparent Tracking:** Provides real-time status updates on transactions across all chains and tokens.
- **Receipt Generation:** Provides easy-to-understand digital receipts for every transaction.
- **Responsive Design:** Responsive and user-friendly web and mobile interface for seamless access across devices.
- **Access to DApps:** Offers direct access to the liquidity of various decentralized applications (DApps).
- **Business Tools:** Offers comprehensive resources like data analytics and product tracking for businesses.
- **API and SDK:** Availability of Application Programming Interface (API) and Software Development Kit (SDK) for custom application development.
- **Financial Analytics:** In-app analytics and insights on sales or purchases.

Use Cases

Crossify's use cases extend across retail purchases, cross-border payments, point-of-sale transactions, and donations. In retail, Crossify enables customers to pay in their preferred cryptocurrencies and automatically converts them to the store's chosen currency.

Businesses dealing with international clients can accept payments in any cryptocurrency, which Crossify then converts to their preferred one.

E-commerce Platforms

- Crossify can be utilized to enable seamless cryptocurrency payments for goods and services. With its automatic fiat-to-crypto calculation and conversion features, customers can make purchases with their preferred cryptocurrencies, while merchants receive payments in their chosen crypto or fiat currency. Crossify's integration with e-commerce platforms simplifies the process of accepting and managing cryptocurrency transactions, eliminating the need for complex conversions or multiple payment gateways.

Remittance Services

- Crossify's cross-chain capabilities can facilitate faster and cheaper remittance services. People living in high inflation zones can benefit from using stablecoins for remittances while reaping the benefits of cryptocurrency profits. This can increase financial inclusion by providing a more affordable and efficient method of sending money across borders.

Subscription Services

- Subscription-based businesses, such as streaming platforms or software-as-a-service (SaaS) providers, can use Crossify to accept recurring payments in cryptocurrencies. Crossify's secure and user-friendly transaction experience makes it easy for customers to set up and manage their subscriptions, while businesses can benefit from the added convenience and security of cryptocurrency payments.

Non-profit Organizations and Charities

- Nonprofits and charities can use Crossify to accept donations in various cryptocurrencies. Crossify's automated conversion and bridging features make it easy for donors to contribute in their preferred cryptocurrency, while the organization can receive the donation in a stablecoin or fiat currency of their choice.

Invoicing and Billing Services

- Businesses that provide invoicing and billing services can integrate Crossify to offer their clients the option to pay in cryptocurrencies. This can streamline the payment process and increase client satisfaction by providing more payment options.

Freelance Platforms

- Freelancers and gig economy workers can use Crossify to receive payments for their services in various cryptocurrencies. This can help attract clients from around the world and provide a more flexible and inclusive payment solution.

Retail Businesses

- Physical stores can use Crossify to accept cryptocurrencies at the point of sale. By displaying a QR code or shared link payment option, customers can easily pay with their preferred cryptocurrency, which is automatically converted to the retailer's chosen currency. This allows businesses to attract a wider customer base and benefit from the growing popularity of cryptocurrencies.

Digital Content Creators & Platforms

- Content creators on platforms like Patreon, OnlyFans, or even independent blogs can implement Crossify to accept payments and donations in various cryptocurrencies. This adds an extra layer of anonymity and security for both the creators and their followers, while also attracting the growing number of crypto users.

Social Media Platforms

- Social media platforms can integrate Crossify to enable peer-to-peer payments or tipping in various cryptocurrencies. This could be used to tip content creators, pay for premium content, or even make purchases on a social media marketplace.

Real Estate Transactions

- Real estate platforms can implement Crossify to enable property purchases with cryptocurrencies. This can simplify cross-border transactions and attract a wider range of investors.

Peer-to-Peer Marketplaces

- Marketplaces like Etsy or eBay can integrate Crossify to allow users to buy and sell goods using various cryptocurrencies. This can attract a wider customer base and make the platform more accessible to crypto users.

Cryptocurrency Exchanges

- Exchanges can use Crossify's cross-chain bridging capabilities to enable users to deposit and withdraw in different cryptocurrencies, making the platform more versatile and user-friendly. Furthermore, exchanges can integrate Crossify to receive and send crypto payments directly from/to the exchange, creating a pseudo account abstraction for the users who do not have a web3 wallet such as Metamask.

Competitive Advantage

Crossify stands out in the crypto payment solutions field due to its unique capabilities. It operates across different blockchains, enabling transactions in various cryptocurrencies, providing flexibility and wider accessibility. Crossify offers business-friendly solutions that simplify the adoption of blockchain-based transactions, removing traditional barriers such as complex integration processes. It provides automated conversion between different

cryptocurrencies and their corresponding local fiat rates, thus eliminating the worry about conversion rates or processes for businesses and customers. Designed with scalability in mind, Crossify supports a high volume of transactions without compromising on speed or security.

Technical Architecture

This section outlines the technical approach of Crossify and the interoperability between the domains of operation.

Liquidity

- Crossify is aiming to capture a lot of decentralized volume.
 - 3 Types of Liquidity Usage;
 - P2P Liquidity
 - In the scenario of two parties having the same choices of Chain and Token, the liquidity is provided by the sender.
 - Same Chain Liquidity
 - For this type a normal swap takes place using the aggregator.
 - Different Chain Liquidity
 - In this scenario two parties have different choices of Chain and Token hence the aggregator swaps bridges and swaps again in a batch transaction.

Storage

- Crossify uses decentralized methods to Authenticate and aims to scale into decentralized storage protocols, further guaranteeing the security and freedom of its users.

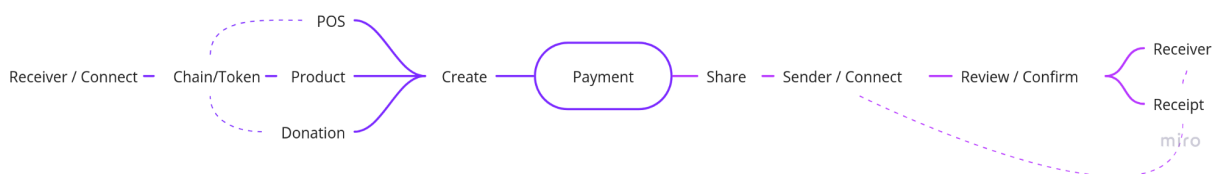
Developer Tools

- **Crossify API** facilitates seamless integration with existing business systems, reducing time and resources spent on infrastructure development.

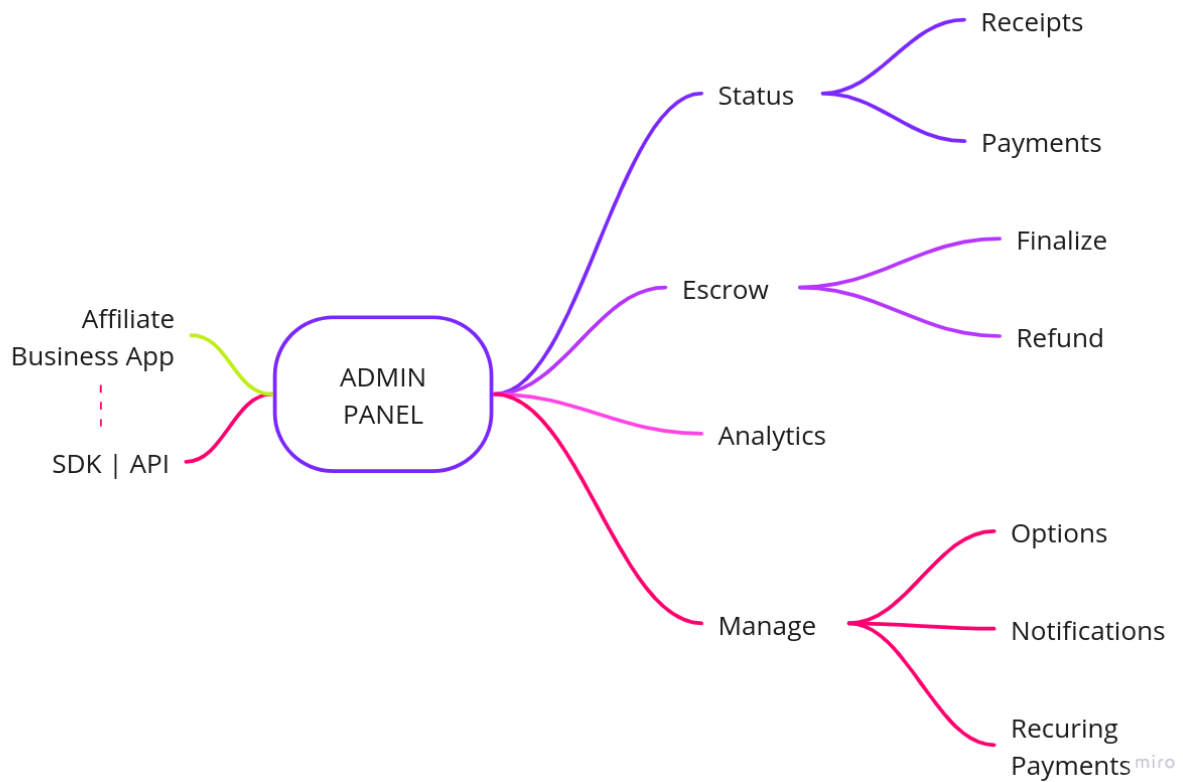
- Swagger Docs
- Endpoints
- Listeners
- Scheduled Tasks
- Sockets
- **Crossify SDK** facilitates the full capability of the API while integrating all the algorithms running the Crossify Product further simplifying the process of development.
 - Crossify API
 - Algorithmic Functions

WEB UI

- B2C App
 - The Crossify B2C app features a comprehensive yet straightforward interface that allows you to send, receive, and manage your cryptocurrencies effortlessly. Designed with usability in mind, we've simplified complex blockchain operations into easy-to-understand actions, making crypto transactions as simple as traditional banking.



- B2B Admin Panel
 - Monitoring and managing the Crossify operations. It offers a range of tools for tracking transactions, managing escrows, managing recurring payments and analyzing transaction data. This feature provides businesses with valuable insights into their transaction activities, enabling them to make data-driven decisions and improve their financial operations.



Mobile

- Covers all the features of the Web UI
- Native Wallet support

Redirect Payments

Allows businesses to integrate cryptocurrency transactions and conversions by redirecting the user to the Crossify UI then bringing them back to where they left off, thus simplifying the integration.

- Affiliate Business Creates a payment using the API | SDK.
 - Provide a Redirect URL & Webhook URL
 - Payment ID is provided to the business.

- Using the payment ID the business initiates a redirect payment, either using their own custom logic with the API or using the provided logic inside of the SDK.
 - Affiliate Application directs the user to the Crossify Payment Page.
 - The user connects their wallet.
 - The user chooses a Chain and Token.
 - The user previews the transaction, once they are sure they will press confirm and sign the transaction.
 - A receipt is issued.
 - The Webhook POST's the receipt data to the affiliate business application.
 - The Crossify Payment Page redirects the user back to the affiliate business application.

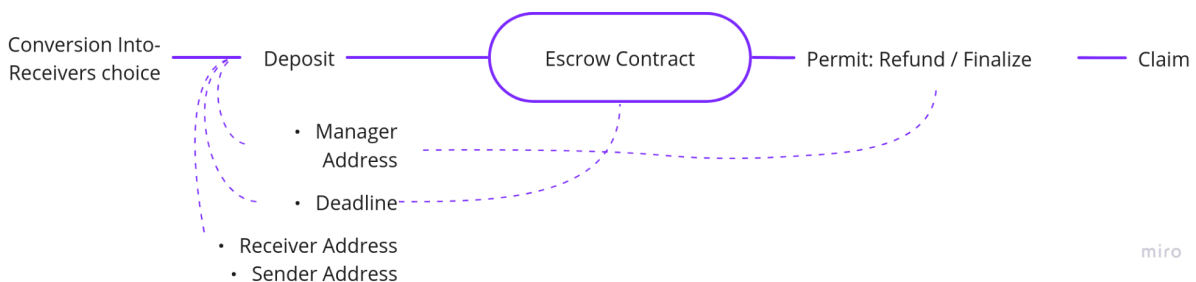


Escrow

Designed for managing escrow payments. This feature provisions payments into a smart contract for further action. This offers an efficient mechanism for handling escrows and transaction disputes.

- An exclusive blockchain is assigned for our escrow contract
- Affiliate business configures the escrow arguments, at their Crossify Admin Panel.
 - Manager Address
 - Deadline
- While the affiliate business app is creating a payment they can clarify, if the payment will be escrowed

- When the user is ready to make a payment he/she is directed to Crossify Redirect Payment page and completes payment
- The token of the sender will be converted into the token of the receiver's choice.
- The converted token will be deposited into the escrow contract with the configuration which our affiliate business configured beforehand.
- Affiliate business then manages their escrow process as they usually do. Once a resolution has been settled, they call either the permit refund or the permit finalize functions of the Crossify Escrow Contract
 - If the deadline is passed the payment will be finalized!
- The sender or the receiver can claim their assets from the Crossify Claim Page
- Now there are two scenarios:
 - Refund: The sender has two options:
 - Claim from destination (This is the chain/token which the receiver requested)
 - Claim from source (This is the chain/token which the sender sent)
 - Finalize: Claim from destination!

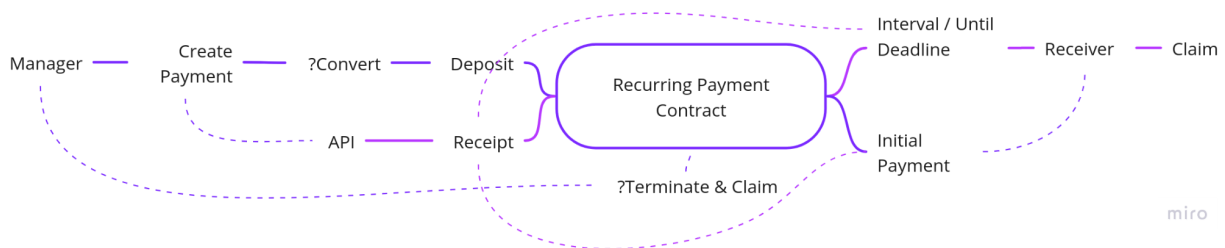


Recurring Payments

- Designed to suffice the need of any business who is in need of interval payments either to sell subscriptions or pay employees based on a deadline.
- A Recurring Payment is created from the API | SDK, with the required fields.

- Redirect URL & Webhook URL
- Manager Address
- Receiver Address
- Token Address & ?Fiat
- Interval
- <Token | Fiat> Amount (Per Interval)
- Deadline
- A Payment ID is returned from the API | SDK
- Funder is guided through the process (Redirect Logic Applies Here).
 - Total amount of $\text{<deadline - currentDate / interval * perInterval>}$ is calculated by Crossify.
 - Connect Wallet
 - Funder chooses Chain/Token to fund with.
 - Field amount will be calculated into field <d> amount (by Crossify UI).
 - A transaction will be formed to convert the chosen Chain/Token into the required Chain/Token defined by the <recurring payment>.
 - Converted funds are deposited into the Recurring Payment Contract, with the required fields.
 - Manager Address
 - Receiver Address
 - Token Address & ?Fiat
 - Interval
 - <Token | Fiat> Amount (Total)
 - Deadline

- Funder is redirected to the redirect URL
- The receiver (affiliate business) is informed with the Webhook URL, about the status of the initial payment of said recurring payment.
 - A receipt is issued.
- Every interval the the contract opens up the calculated amount
 - When the amount is set as fiat a calculation has to be made matching the token amount with the current rates.
 - A receipt is issued at every interval, via the api listeners.
- The Manager Address Abilities
 - Terminate
 - Once the contract has been terminated, the remaining funds can be claimed by the manager address.



Connectivity

- **Feedback:** Crossify's B2B solution includes live transaction feedback, transaction analytics, and notifications. These features provide real-time insights into transaction status and trends, helping businesses to stay updated and respond promptly to any transaction-related issues.
- **Receipts:** easy-to-understand receipts for financial bookkeeping. This simplifies the accounting process and ensures compliance with financial regulations.

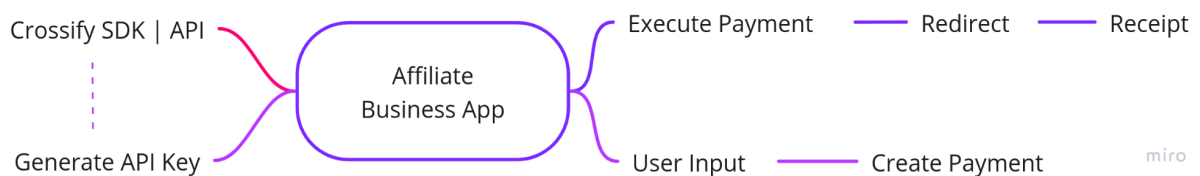
Integration and Implementation

The successful integration and implementation of Crossify's B2B solution into existing business systems necessitates a streamlined process that minimizes disruptions while maximizing value. With this in mind, Crossify is designing its solution to ensure a smooth transition for businesses embracing the paradigm shift towards cryptocurrency transactions.

Integration

The first step involves integrating Crossify's API | SDK into the existing business system. The API | SDK has been developed with flexibility and adaptability in mind to accommodate various operational needs. The Swagger API documentation provides businesses with comprehensive guidance on the integration process, ensuring that the technicalities of the integration are well understood and executed.

Crossify's Software Development Kit (SDK) further simplifies this process by encapsulating the API and the algorithms that drive the Crossify platform. This offers a unified approach to integration, reducing the need for businesses to manage disparate aspects of the process. This ensures businesses can leverage the full capability of Crossify's solution without the need for extensive infrastructure development.



Implementation

Once the integration is complete, businesses can start implementing Crossify's B2B solution. The Redirect Payments feature eliminates the need for a web3 wallet

integration, enabling businesses to focus on their core operations while Crossify handles the intricacies of crypto transactions.

As businesses start to transact, the Escrow Contract becomes instrumental in managing escrows. This feature offers an efficient mechanism for handling transaction disputes and refunds, providing businesses with a secure and reliable transaction environment.

The Admin Panel serves as the command center, providing businesses with an array of tools for tracking transactions, managing escrows, and analyzing transaction data. This real-time oversight empowers businesses to make data-driven decisions and refine their financial operations.

To round off the implementation, Crossify's live transaction feedback, analytics, and notifications keep businesses updated on their transaction status and trends. The provision of easy-to-understand receipts also simplifies the financial bookkeeping process.

Security and Compliance

The platform leverages the inherent security of blockchain technology, while also incorporating additional measures to protect our users and maintain compliance with regulatory standards.

Security

Crossify employs a multi-faceted security approach. The first line of defense is the "Sign in with Ethereum" mechanism, which acts as the authentication system. By leveraging Ethereum's decentralized and secure design, Crossify allows users to sign in with their Ethereum wallet.

The Escrow Contract system protects the affiliate businesses/users. This system only allows limited functions to be used, thereby preventing unauthorized or fraudulent activity. By pooling provision payments into a Smart Contract, Crossify offers a secure environment for handling escrows, transaction disputes, and refunds.

Compliance

In terms of compliance, Crossify operates within the legal framework of each jurisdiction it serves. In order to maintain a frictionless operation and uphold the principles of decentralization, the platform will limit any transaction to the country-wide non-KYC limits.

When a user is transacting above the threshold, they are prompted with an option to register into our partnered KYC Providers and continue transacting according to their jurisdictions legal framework. By adhering to these regulatory standards, Crossify ensures that businesses can conduct their operations without fear of non-compliance penalties.

Moreover, Crossify provides easy-to-understand receipts, which not only simplifies the financial bookkeeping process for businesses but also ensures compliance with financial regulations.

In summary, Crossify's security and compliance mechanisms are designed to give businesses peace of mind when engaging in cryptocurrency transactions. By harnessing blockchain's inherent security and abiding by country-specific compliance regulations, Crossify is creating a secure, trustworthy, and legally sound platform for the future of B2B transactions.

Community

The Crossify community is the backbone of our innovation, providing the creative thrust that propels our vision forward. This vibrant ecosystem is a blend of passionate individuals, including cryptocurrency enthusiasts, developers, industry experts, and everyday users, all of whom share a common objective: to bridge the gap between the traditional economic system and the blockchain.

Our community is not just a passive audience but an active participant in the development and improvement of the Crossify Protocol. We encourage every community member to voice their opinions, provide feedback, and suggest improvements. By fostering a culture of open dialogue and constructive criticism, we believe that Crossify can evolve to meet the changing needs and expectations of our users.

As we scale our product, a community fund will be established. This fund will be utilized to stimulate further development and advancement of the Crossify Protocol. In tandem, we will establish a Decentralized Autonomous Organization (DAO), allowing community members to vote on key decisions and steer the direction of the project.

This sense of ownership and shared responsibility within our community is what sets Crossify apart. We are not just building a protocol; we are building a new way of thinking about and interacting with the economic world, and every member of our community plays a vital role in this endeavor.

Conclusion

Crossify represents a seismic shift in the way we perceive and utilize cryptocurrencies. Our aim is not just to create a product but to catalyze a movement that challenges the status quo and reshapes our economic system.

Our innovative solutions are designed to bridge the gap between traditional economic systems and the blockchain. We are relentlessly focused on enabling seamless transactions, providing users with secure and efficient means of sending, receiving, and investing with cryptocurrencies. By automating complex calculations and providing an

intuitive interface, we are making cryptocurrencies more accessible and practical for everyday use.

The road ahead is fraught with challenges, but with a dedicated team and a passionate community at our side, we are well-equipped to overcome these obstacles. We are committed to continuous learning, improvement, and innovation to keep Crossify at the forefront of the crypto space.

At the heart of Crossify lies a vision of a more inclusive, efficient, and decentralized economy. Together, we will demonstrate that cryptocurrencies are not just a financial instrument, but a powerful tool that can transform economies and empower individuals all over the world.