



KryptoPal

Connecting Apps Seamlessly and
Securely with Blockchain

White Paper

KryptoPal AG is a Switzerland (Zug) based company.

About Us

KryptoPal is a blockchain-based platform, which can be integrated with many applications around the world to perform various cryptocurrency transactions.

It was started by technologists who have been inside the world of blockchain for years and is aware of the current barriers preventing widespread and global adoption of cryptocurrency.



OUR MISSION

KryptoPal aims to empower people worldwide with the latest blockchain technologies by finally providing a seamless solution at the genesis layer of all applications, rather than individually at the edge.



OUR VISION

KryptoPal strives to be a leader in bringing cryptocurrency, distributed ledger, blockchain, and other emerging technologies to the global digital marketplace as they develop and mature.



OUR VALUES

KryptoPal's motive is to be a trustworthy, dependable, skilled, reliable, collaborative and socially responsible partner with the highest integrity.



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Executive Summary

Despite the widespread acceptance and enthusiasm for blockchain and cryptocurrency, there remain three significant barriers preventing widespread adoption.

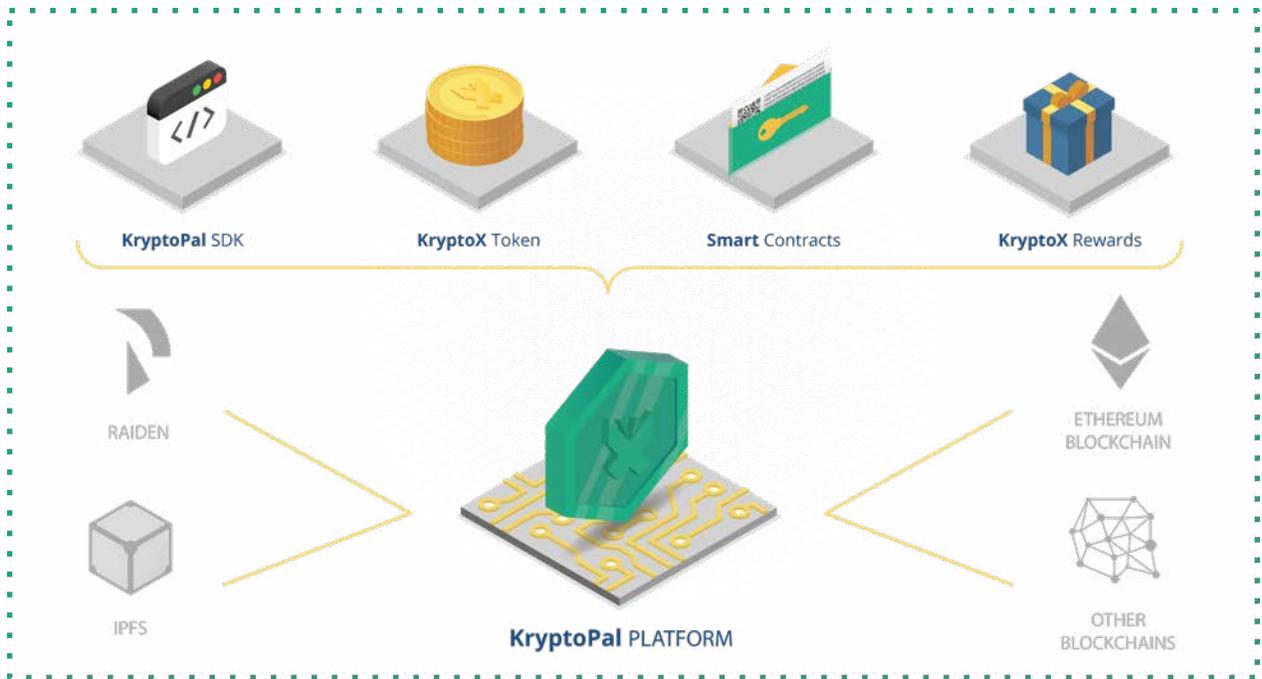
Because the technology is new, it is not easily integrated into applications and existing systems by non-expert developers due to a lack of documentation, infrastructure, and development tools.

Second, although cryptocurrency-based transactions are gaining popularity, transaction latency restricts users' ability to perform real-time transactions like they are currently accustomed to.

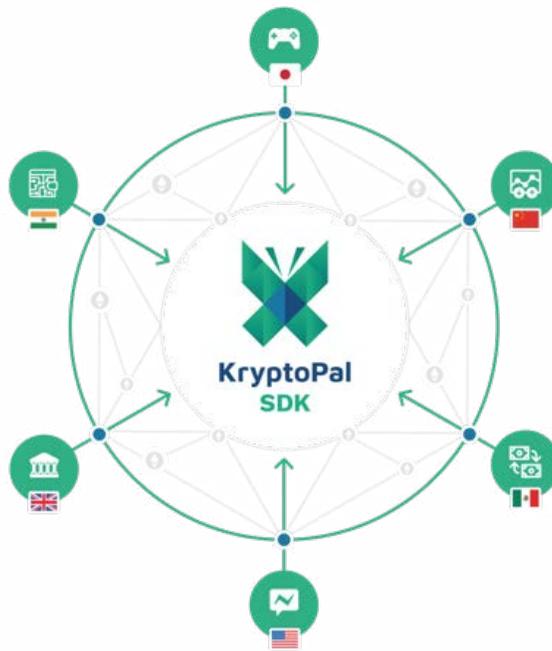
Finally, there are 6.5 million applications being used by over 4 billion people worldwide [2,3], yet most of these applications still lack the capability to interconnect commercially and provide holistic and seamless experiences for their users. This creates unnecessary friction and restricts their ability to maintain access to various external personal accounts (e.g. cryptocurrency wallets) for payments.

KryptoPal solves three critical problems by offering the intuitive KryptoPal Software Platform

The KryptoPal platform consists of a Software Development Kit (SDK), an extensible Application Programming Interface (API), the KryptoX token (KPX), and secure Smart Contracts and payment channels.



When the KryptoPal SDK is integrated with any existing application: the application is instantly connected to the Ethereum blockchain, the application is interconnected with the other applications in the global network, and app users are enabled to interact with each other to perform cryptocurrency related transactions.



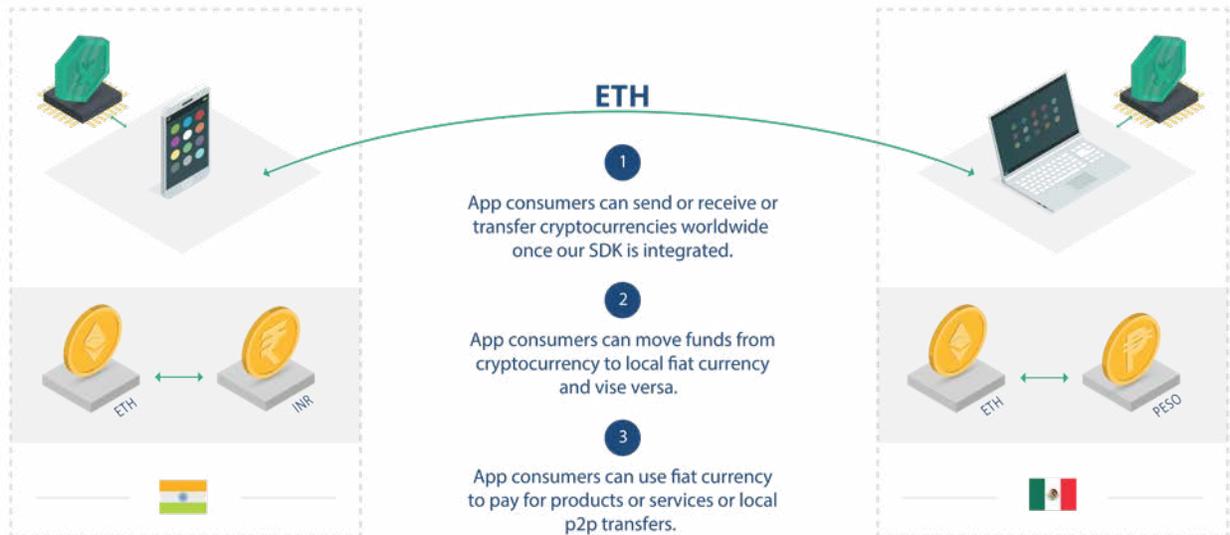
The KryptoPal platform can be integrated with any application, browser or device application to integrate blockchain functionalities like cryptocurrency transactions, smart contracts, and reading and storing blockchain states. All allowing for a brand-new and superior user experience.

Application providers integrate our powerful SDK and API to unlock brand new capabilities within their applications or services:

Global Instant access to the new global market	Real Time Real-time, zero-fee, cryptocurrency micropayments using our off-chain channels	Smart Contracts Integration with the cutting-edge world of smart contracts	Monetization Monetization of every transaction triggered through the KryptoPal Platform
Cross-application A brand-new toolset and transaction capacity for cross-application integration	Increased Transaction Volume New transaction volume via cryptocurrencies using secure on-chain and off-chain transactions	Customer Retention Tools Groundbreaking customer retention tools such as cryptocurrency-backed rewards, loyalty points and branded cards	

Everyday consumers can harness the power of the blockchain to perform functions like:

- Send, receive, buy, and/ or sell cryptocurrency instantly
- Buy and sell products or services in an interconnected global market
- Exchange and convert cryptocurrency
- Receive novel types of cryptocurrency protected rewards and loyalty points



The KryptoX token is an integral part of the platform that will be utilized by consumers to access premium API features and transact in real-time by opening micropayment channels.

- Serve millions of consumers on the platform through integration with mainstream applications worldwide
- Use the token to access our network and cover fees on every transaction that is triggered through the KryptoPal platform
- Award tokens to end users
- Open real-time micropayment channels with zero fees
- Engage merchants with new functionalities like buying merchandise, consuming premium API functions, making micropayments, and paying bills

Universally, the KryptoPal platform introduces an entirely new realm of possibilities for conducting transactions using cryptocurrency and smart contracts.

Market Analysis

KryptoPal will provide a seamless solution at the heart of all applications and empower people worldwide with the latest blockchain technology through a platform and network that bridges the gap between businesses, applications, consumers and the emerging world of blockchain technology and decentralized applications.

The KryptoPal platform integrates with every kind of application or service including wallets, remittance services, payment networks, eCommerce, gaming, banking systems, IoT, and POS applications.



6.5M Mobile Apps

[2]



4B App Users

[3]



360M Mobile Wallet Users

[9]



22M Crypto Users

[11]



\$155T Total Money Transfers

[18]



\$600B Money Transfers by Individuals

[8]



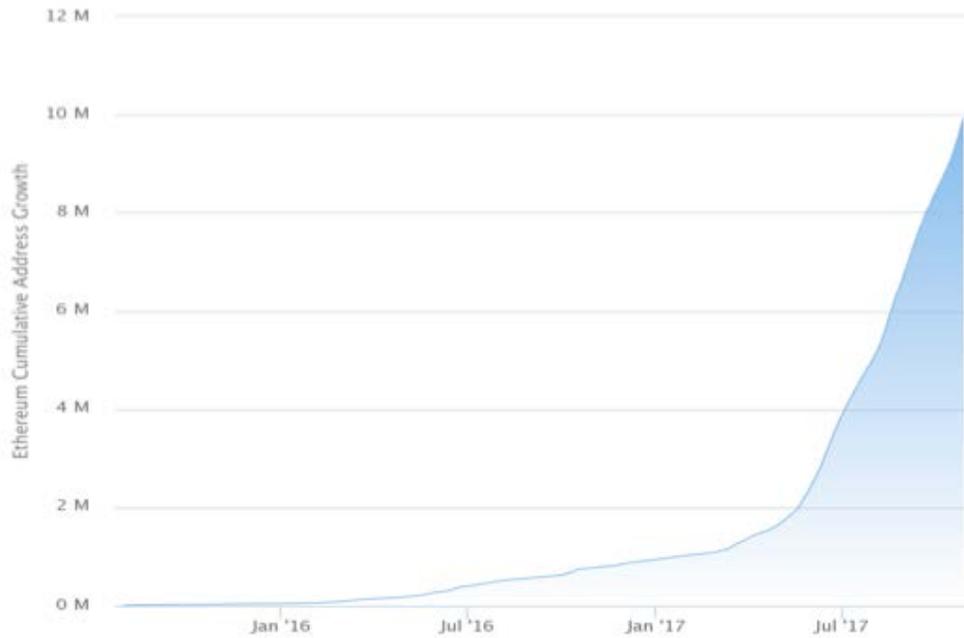
1 Million Apps Related to Finance

[2]

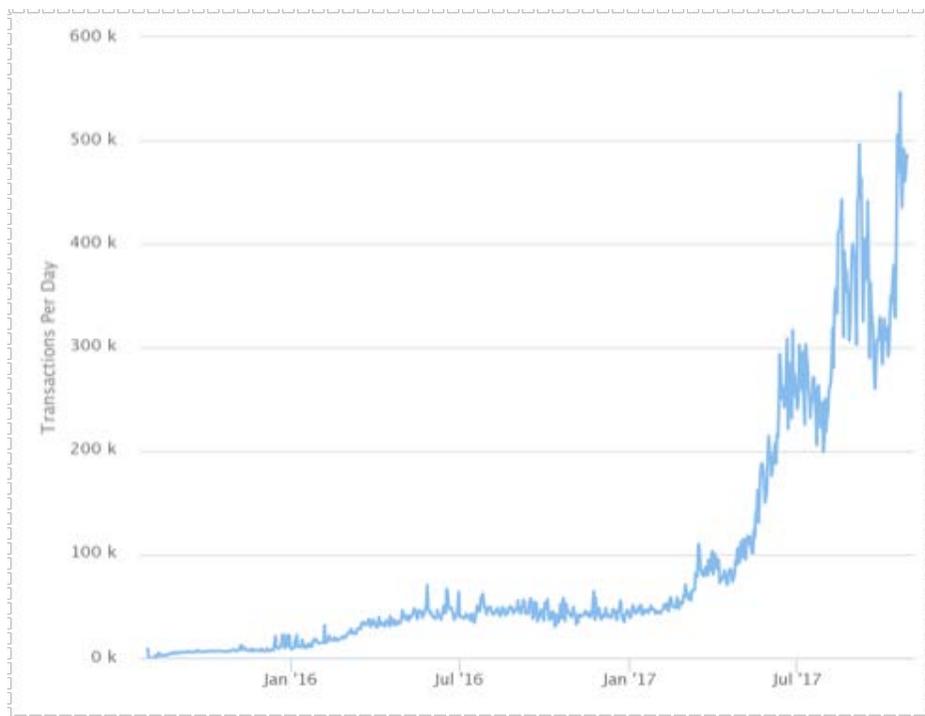


\$4 Trillion eCommerce Sales by 2020

[10]



Unique Ethereum Wallets Growth



Ethereum Transactions Per Day (2016-2017)

Current Technology Landscape

Although blockchain and distributed ledger technologies have introduced groundbreaking advances, they also imposed scaling limitations among other challenges.

Limitations of Mobile and IoT Devices

There is significant overhead associated with blockchain technology related to storage capacity and computational requirements. This single characteristic currently prevents the use of blockchains on mobile or IoT devices. This makes it highly unlikely that we will see widespread adoption of the many varieties of cryptocurrency in the extensive variety of applications and devices available unless a technology is developed that reduces storage capacity and computational overhead (bandwidth).

Transaction Overhead

There are several ways a user can currently transact in cryptocurrency: using a full or archive node, using a light client, or broadcasting a signed transaction to another node.

Full/Archive Node: A full node, is a device connected to a blockchain that contains the entire transaction history and current state of the blockchain. In this instance, the overhead is the actual storage capacity requirements. The problem is that each application requires the consumer to have access to this large storage capacity for each blockchain it wants to allow its consumer to transact on, and have the ability to scale in parallel with the blockchain. This is not feasible, and in most cases the additional security that this provides is less than what is needed for smaller day-to-day transactions.

Light/ Embedded Node: Although full security is only possible in a full node with the entire blockchain history, a light client allows minimal overhead for a reasonable amount of security (with approx. 1 KB of data bandwidth required per second) [12]. In a light client, or “partially light client”, a node is required to download the latest block headers as a minimum requirement for basic functionalities. In this case, the client is still required to be able to stay in sync with the latest blockchain state so there is still some bandwidth or storage capacity required to interact **with each blockchain**.

In most cases, light clients rely on broadcasting a transaction to a full node and will require the providers to host the full node being used to relay transactions from the user to the blockchain.

Broadcasting: Most application providers will likely only need to implement a basic solution to sign and hand off a transaction to any party without the risk of revealing information about their private key. Due to advances in cryptographic technology, clients can implement this with minimal overhead requirements.

The limitation here is not in storage or bandwidth capacity, but in having an all-encompassing platform to manage these unique functional requirements.

Independent Fee Variables

An additional adverse side effect of transacting directly on the blockchain is that there is a transaction fee associated with all transactions, and this fee is governed by the blockchain's governing protocol. This creates a predicament for users transacting in an underlying token that exists within a blockchain ledger. When a user wants to send tokens or interact with a smart contract, they must also consume the blockchain's native currency (Ether in the case of Ethereum-- for other blockchains the fees can be even more variable). However, the variation of the value of the native currency is completely independent to the token that the user wishes to transact with. **This means that every time a user sends a token, they are charged a fee** that has a value independent of the transaction that they are making.

Different Blockchain, Different Overhead

The overhead mentioned in the previous section only covers the overhead of a single blockchain; To enable cryptocurrency transactions on multiple blockchains, **additional and unique** overhead is required for **each additional currency implementation**.

Latency and Confirmation Time Restrictions

On-chain transactions are subject to the confirmation times of the underlying blockchain. This consensus mechanism is used for verifying a blockchain's inherent cryptocurrency transactions (such as Ether). Although this mechanism is necessary to provide full security against double spend attacks, it sometimes operates independent of an underlying token's functionality. This means that consumers are subject to a timeframe in which the rest of the blockchain must come to consensus and affirm a transaction as valid.

While Bitcoin introduced ten-minute block times, and Ethereum brought us sub-minute block times, the speed of transactions is computationally limited by the scaling implementations of each blockchain. For instance, the Ethereum blockchain can only handle approximately 5-25 transactions per second [4,5,6,7]. Although there are a number of proposals to create off-chain transactions with adequate cryptographic security for micro-transactions [14,15,16], there are currently no market-ready solutions.

Interconnectivity of Applications

Before the advent of distributed ledger and blockchain technologies, applications were restricted to centralized design and their ability to interconnect with other providers. These centralities must define the rule sets for connectivity within their application or service, as well as between itself and other applications and services.

Although this has implications related to corruption, trust, and third parties, this means integrating transaction-based functionalities, within or between applications, requires each provider to engage with third parties to allow access to and from third-party applications or services.

Existing Solutions

To date, a number of individual solutions to each of these problems has emerged to provide new advances to the landscape of decentralized application development.

Raiden Network is an off-chain scaling solution, enabling near-instant, low-fee and scalable payments. It is complementary to the Ethereum blockchain and works with any ERC20/223 compatible token. Its goal is to research so-called “state channel” technology, define protocols and develop reference implementations. Source: <https://raiden.network/>.

OmiseGO is a public Ethereum-based financial technology for mainstream digital wallets. It enables real-time, peer-to-peer value exchange and payment services agnostically across jurisdictions and organizational silos, and across both fiat money and decentralized currencies. Designed to enable financial inclusion and disrupt existing institutions, access will be made available to everyone via the OmiseGO network, SDK and digital wallet framework. Source: OmiseGO, <https://omg.omise.co/>.

Ripple provides a frictionless experience to send money globally. By joining Ripple’s growing, global network, financial institutions can process their customers’ payments anywhere in the world instantly, reliably, and cost-effectively. Banks and payment providers can use the digital asset XRP to further reduce their costs and access new markets. Source: Ripple, <https://ripple.com/>.

TenX is a solution provider that allows users to convert and spend some leading cryptocurrencies through the use of a debit-like card. A cardholder can easily monitor and maintain their security settings, portfolio spending, daily spending and withdrawal limits. TenX is equipped with a banking license and debit card system that will help establish it as a payment network for the real-world to connect with the blockchain ecosystem. Source: TenX, <https://www.tenx.tech>.

Civic's Secure Identity Platform (SIP) uses a verified identity for multi-factor authentication on web and mobile apps without the need for usernames or passwords. Their solutions can potentially lead to cross-application interoperability by allowing each its identity solution. Source: <https://www.civic.com/>.

Abra operates an easy to use smartphone-based digital currency wallet based on bitcoin. Their solution paves the way for global cryptocurrency adoption by allowing users access to a more traditional <https://www.abra.com/>.

Coinbase founded in June of 2012, Coinbase is a digital currency wallet and platform where merchants and consumers can transact with new digital currencies like Bitcoin, Ethereum, and Litecoin. They provide a centralized solution to bringing cryptocurrency to the masses. Source: Coinbase, <https://www.coinbase.com/>.

Infura is a solution to the current blockchain overhead problem. They expose a number of API endpoints that allow applications to interface with decentralized solutions like the InterPlanetary File System (IPFS) and Ethereum full nodes. Source: Infura, <https://infura.io/>.

Summary

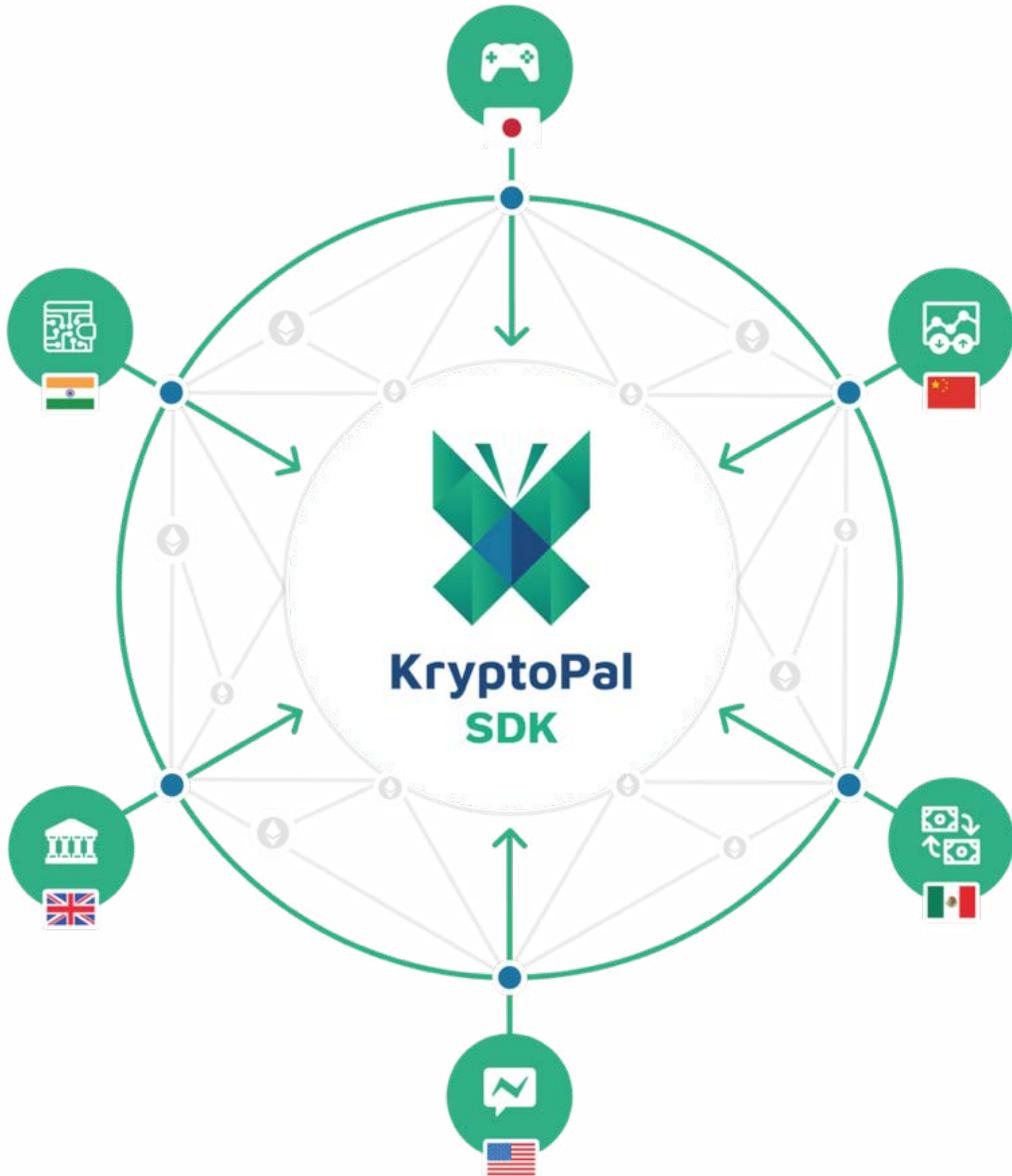
Each of the above companies solve for a singular problem, or addresses the issue within a user-facing application.

We believe each one of these barriers is critical to solve and what is needed is to integrate protocols and solutions to provide an all-encompassing solution that can be easily used by existing applications, service providers, and developers eager to implement blockchain and cryptocurrency technology into their existing or future applications, devices, or services.

KryptoPal provides this as an all encompassing solution to each of these issues embedded into one SDK.

KryptoPal's Solution and Possibilities

When the KrptoPal SDK is integrated with an existing application, that application is instantly connected to the Ethereum blockchain, becomes interconnected with other applications in the network, and empowers their users to interact with other applications or devices to perform cryptocurrency related transactions.



KryptoPal addresses the problems restricting widespread adoption of blockchain and cryptocurrency technology by creating an all-encompassing platform that integrates best in class solutions into a single toolset and framework that developers can learn to use intuitively. Application providers can then customize and seamlessly integrate the KryptoPal toolset into their existing applications, removing the need to force users to adopt new applications without the associated overhead. This approach (i) resolves transaction latency, (ii) eliminates independent fees associated with token transactions (when inside a payment channel), and provides an interconnected software fabric for applications to freely transact with one another.

Each of these components allows providers to implement revolutionary new functionalities like transaction broadcasting, identity management (inside and across different applications), micropayment channels for real-time zero-fee token transactions, cryptocurrency and global currency exchange rates, and smart contracts into their applications and services.

Implement New Blockchain Functionalities

Although the new world of blockchain has brought us various new currencies, each blockchain presents additional and unique overhead concerns that application providers must satisfy in order to use the currency.

The KryptoPal platform Handles Every Unique Overhead Requirement:

The KryptoPal platform effectively eliminates the overhead requirement by allowing for global, local and decentralized endpoints that communicate with different blockchains. This approach is dramatically different from the alternative of requiring multiple blockchains to be implemented within individual applications.

Each of these different endpoints abstracts the communication between an application or service with a decentralized swarm of full blockchain nodes. Consequently application providers do not need to understand the entirety of how blockchains work.

Additionally, abstracting each blockchain functionality into more familiar and native protocols allows application providers to seamlessly introduce any blockchain functionality to their application. As a result, the power of blockchain and cryptocurrency can finally be introduced on a universal level for IoT, POS, mobile, and other devices that have, up until now, been limited in their ability to perform these functions.

Solve Inherent Cryptocurrency Latency Problems

The business model of some application providers requires real-time payments, which is not an inherent capability of most blockchains due to the slow confirmation times, and imposes a need for an efficient solution to support such business models.

Introducing μ KPX Channels: Users of KryptoPal-Powered applications can open off-chain payment channels using the cutting-edge μ Raiden network. By allowing users to lock tokens on-chain and trade balance proofs in real time, these channels allow application providers to connect to their consumers and enable real-time zero-fee transactions. When either party chooses to close the channel, their balances are updated to the blockchain using the last balance proof.

Using the KryptoX token will open a channel, leveraging the security of the μ Raiden and Raiden network, and allow transfers between the application provider and consumer. While latency and fees associated with transactions outside of a μ KPX channel will incentivize application providers to integrate with the KryptoPal platform, rapid and zero-fee transactions will incentivize consumers to use KryptoPal-powered applications.

Interconnected Applications and Other New Possibilities

The KryptoPal platform provides a new connective fabric for different applications so they can transact with one another. The staple of this fabric is a set of generalized endpoints that are abstracted to allow for familiar messaging and application protocols to trigger blockchain-based functions.

Blockchain-Based Identity

Global Identity: A network of nodes with permissioned API endpoints can be used by application providers to leverage cross-application connectivity for functionalities like application-to-application invoicing, transaction broadcasting, and smart contract interactions.

Localized Identity: Business scenarios that require identity management to be permissioned and private, can utilize a localized identity endpoint for permission management and maintaining internal identity. This can range from having the application's users only able to access and transact with one another, to applications where only the application and end user can access and transact with each other.

Bridged: Application providers may also explore building bridged identity API functionalities that use a global lookup to allow identity information sharing at their discretion to enable cross-application identity-based functions.

Provider Identity: A registry of KryptoPal-Powered applications will create a network of registered applications to allow for the distribution of collected fees and provide a lookup for cross-application cooperation.

New Possibilities Are Available with KryptoPal

By integrating with existing application architecture, new and innovative possibilities are available for application providers that integrate their application or services with the KryptoPal platform, today.

On-chain Transactions: The KryptoPal platform enables application consumers and providers to transact in various methods, including on-chain transactions in accordance with the transaction times and fees of the underlying blockchain and infrastructure. These transactions can be made at the client, local, or global level by any user inside or across applications (subject to provider implementation).

Smart Contract Interactions: Application providers can seamlessly integrate transactions with smart contracts to allow for a range of applications that automate payments, based on real-world events or user interaction.

Invoices: Applications will be able to incorporate cross-application, cross-device cryptocurrency payments. For example, a user of an application integrated with KryptoPal can purchase a drink instantly using their cryptocurrency from a KryptoPal integrated vending machine owned and operated by a completely separate company.

The possibilities of KryptoPal-Powered applications are endless and **unlock entirely new use-cases** and features by leveraging native blockchain functions in their applications or services.

How the KryptoPal Platform Works?

The KryptoPal platform abstracts blockchain-based functions into easy-to-use and familiar API endpoints wrapped in different SDKs that application providers will be comfortable using. This removes development barriers preventing the widespread adoption of decentralized applications.

Breaking Barriers to Adopting Blockchain Functionalities

By providing application providers easy and low-cost access to different blockchain functionalities, KryptoPal allows them to focus on their application's core offering and not deal with the significant overhead and technical intricacies of trying to understand and leverage the blockchain themselves.

KryptoPal Handles All Unique Overhead Requirements

KryptoPal provides fully functional instances of many different blockchains and creates an application interface that allows for seamless interactions.

API Endpoints That Handle All of the Overhead for You. Each of the KryptoPal API endpoints can be leveraged individually, in combination, or as a whole. They serve as the building blocks that an application provider can leverage for creating new possibilities with blockchain technology.

A few of the more basic API endpoints are described below:

Ticker: Real-time cryptocurrency exchange rates from a variety of sources. This endpoint is defined in the API specification as a **population point**. Cryptocurrency exchange rates can be obtained from specific markets (i.e., Bittrex, Kraken, etc.) and in multiple currencies, such as a local fiat currency.

Forex: Real-time foreign exchange rates from a variety of sources. Foreign exchange rates are also defined in the API specification as a **population point**. Foreign exchange rates can be obtained from a selection of sources and are provided so that users operating in different currencies can send localized invoices to one another. In using this endpoint, a user might be looking for a negotiable exchange rate in a local currency between applications that transact in different fiat currencies.

Broadcast: A queued endpoint that relays signed raw transactions on behalf of the application provider or the consumer. A user of an application provides a signed transaction to the global KryptoPal API endpoint which communicates to a variety of full blockchain clients (e.g., Ethereum, Bitcoin, etc.), as well as to optionally provided local (provider-hosted) endpoints, or to a decentralized network of transaction relays.

Order: Allows for proxied interaction with a specified decentralized or centralized exchange (e.g., placing a ETH/KPX buy order).

Identity: Both the global and local API identity endpoints which allows for reading from the provider or user registries, can be used to allow for address book functionalities or application-to-application interactions.

Invoice: Exist both locally and globally. Application providers and consumers can create and “listen” for invoices so that the invoices can be broadcasted between different types of applications. This enables the initiation of invoices both between and within applications or services.

Channels: Used on a local level to create μ KPX channel between parties. When a party opens this new channel, either the party or the application provider they are proxying through, must directly interact with a set of smart contracts. For example, this could be done by paying “gas fees” associated with opening an on-chain channel manager, or the “gas” associated with joining an existing channel. Once the channel exists, the application provider and consumer may freely deposit funds and transact in real-time without any per-transaction costs, subject to the scaling capacity of the parties engaged in the channel rather than the blockchain itself. On a global scope, a similar endpoint exists to create application-to-application channels.

Blockchain: Read from the blockchain to retrieve data from a decentralized exchange smart contract.

IPFS: Interact with the InterPlanetary File System (IPFS) to perform various functions, such as retrieving or storing data and files.

Global, Local and Decentralized Endpoints

Each of the API endpoints that KryptoPal enables can be consumed in some combination of the following:

Global: KryptoPal provides a default endpoint which can be further customized or extended by application providers. Additionally, these act as a global application registry.

Local: API endpoints that exist on the global scope can be deployed to a private, application provider-hosted, instantiation. Additionally, application providers can easily customize and extend these endpoints to provide additional functionalities.

Decentralized: API endpoints can be deployed to a swarm of nodes which can serve as a distributed source of truth for information such as exchange rates. Additionally, they can be used as building blocks for blockchain relays for pure and trustless transactions.

Client: If an application consumer happens to have direct access to a personally controlled blockchain instance, the client can interact directly with it, rather than handing off the request to a different provider.

Handling Latency

Many applications today require real-time feedback and transaction capacity. The KryptoPal platform provides a number of solutions for these applications, the most important of these being KryptoPal's concept of μ KPX state channels.

Revolutionary μ KPX Channels

KryptoPal provides a unique feature that resolves the inherent transaction latency that is imposed by many blockchains and decentralized applications. Users inside of a KryptoPal Powered application can open μ KPX state channels to enable real-time blockchain transactions and functionalities.

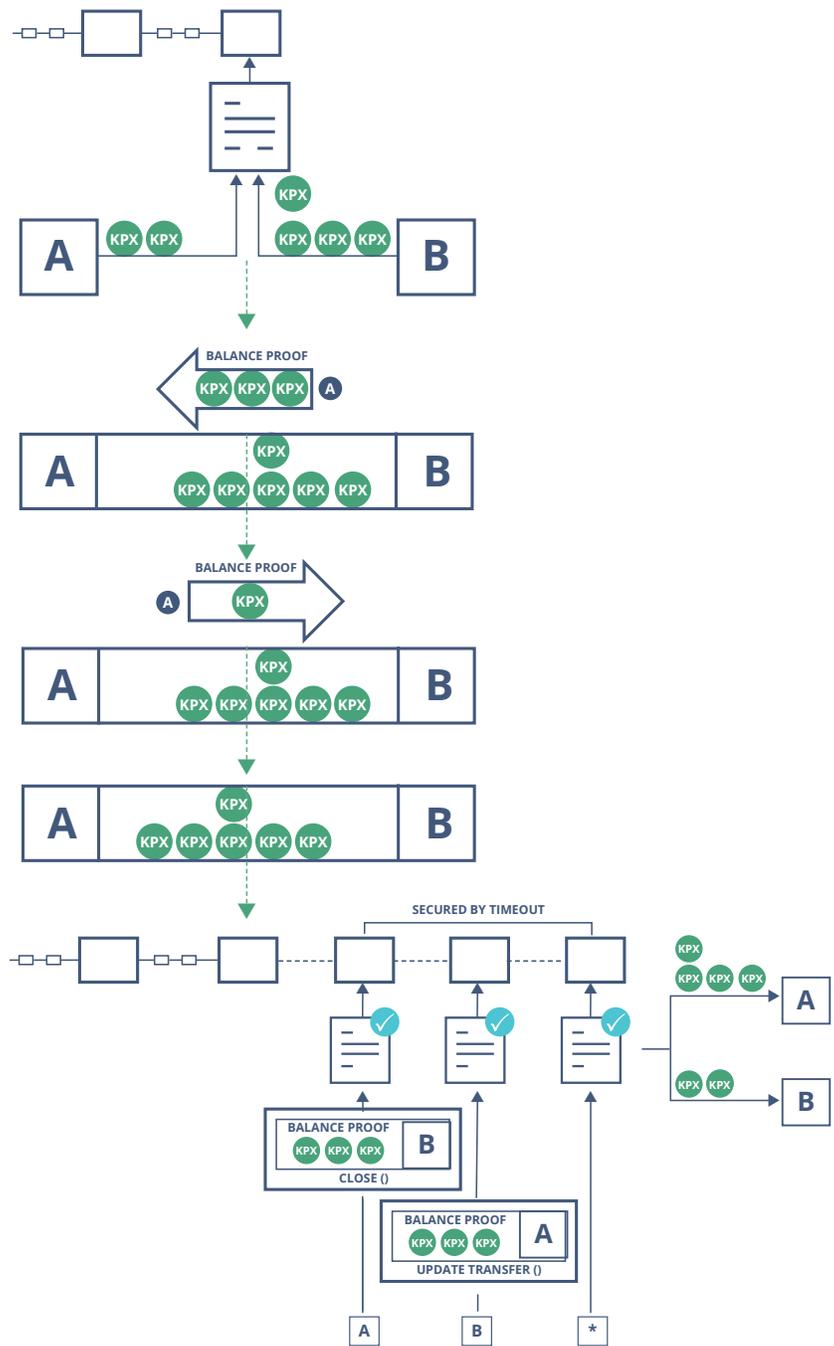
Lifecycle of a μ KPX State Channel

A μ KPX state channel maintains the secure transfer of tokens within a state channel without the overhead of Proof-of-Work (a consensus mechanism that effectively prevents real-time transactions) that the Ethereum blockchain employs. It does this by utilizing hash-locked transfers, referred to as balance proofs, which are fully collateralized by on-chain deposits.

These state channels are referred to as μ KPX (many-to-one relationship) and rKPX (many-to-many relationship) channels. When parties enter into a state channel, the scale at which they can transact with each other depends on the computational power they provide to one another, not on the blockchain. After these parties have entered into a μ KPX channel, they can initiate uni-directional transfers between each other, so long as the cumulative transfer total does not exceed their deposits.

Since transactions in a μ KPX state channel happen off-chain, participants must deposit tokens directly on-chain and use their KPX to open the channel using a smart contract. This deposit effectively locks up a specified amount of the end user's token balance using a snapshot of the Ethereum blockchain at a given block height. Primarily, this prevents the consumer and provider from double-spending tokens.

Once a μ KPX payment channel is created, participants may trade off-chain credits by signing proofs of their balances and exchanging them with one another. Instead of keeping track of all credits, the end user and provider, or the peers involved in the μ KPX channel, keep a copy of the latest credit. The balance proof the μ KPX participants exchange with each other contains the final sum of all token transfers between each participant.



During their exchange, token balance credits and debits are maintained off-chain. When one of the parties wants the payment channel closed, they request to settle the balance on-chain and have their respective balances updated and deposits unlocked. An example of how this works is as follows:

Alice and Bob have entered into a μ KPX payment channel. Alice has transacted with Bob in the form of micropayments for accessing Bob's digital content. Alice is now ready to close the state channel and settle the balance back on the blockchain so that she can pay her outstanding balance to Bob and claim her unspent balance.

To do so, Alice presents her balance proof to the μ KPX smart contract maintaining the channel. In turn, Bob must present a balance proof of his own. After both parties have submitted their balance proofs, both Alice and Bob can unlock and claim their deposits. If Bob fails to present a balance proof before the state channel times out, the outstanding balances will still be distributed according to Alice's final balance proof, which Alice submitted to the contract (to maintain user's and provider's access to their funds at all times). Now that Alice and Bob have finished transacting with each other, the μ KPX channel is closed, their deposits are unlocked, and their on-chain balances are updated accordingly.

Aside from the deposit and settlement that happens on-chain, μ KPX transfers can happen without any fees, as no gas is being consumed. They also occur in real time, bounded by the transaction bandwidth they provide each other.

Solving the Independent Transaction Fee Problem

Token transfers that happen on-chain in the Ethereum blockchain impose an interesting challenge: transaction fees are largely independent of underlying token transfers.

Consider a case where Alice wants to send 1,000 KPX to Bob. Because of the way Ethereum token transfers happen, gas needs to be consumed to cover the contract's transfer function (abiding by the gas costs associated with that function's OPCODES). This is used to subtract Alice's account by 1,000 KPX and subsequently add 1,000 KPX to Bob's total balance. However, the transaction fee that is required is dependent on the Ethereum blockchain on-chain execution fee - in this case the gas fee and not KPX.

In leveraging μ KPX state channels, after a channel is established, parties can begin transacting off-chain, effectively increasing the scaling capacity of transactions independent of the Ethereum blockchain. As such, the KryptoPal platform removes the predicament of currency-independent on-chain fees by allowing users to open a μ KPX channel and transact without the independent fee that on-chain transactions incur.

Interconnecting Apps

Blockchain revolutionized financial and data based transactions by allowing applications to rely on distributed sources rather than single points of authority. Applications can now invoke inter-application functionality such as financial transactions, data retrieval, and more. These are not inherently simple tasks and is where KryptoPal resolves some major issues. The KryptoPal platform abstracts these functions in a way that is familiar to application providers and enables consumers to enjoy real-time, zero-fee, cryptocurrency micropayment transactions using our off-chain channels.

Blockchain-Based Identity

With blockchain-based identity, users can register and permission their identities such that “Alice” can assign an Ethereum address as a receiving address for all Ethereum transactions. In doing so, “Bob” may now send Ether directly to “Alice”, (rather than her Ethereum address) such that it performs a lookup on the **identity** API endpoint by passing in the name value “Alice”, which should return her Ethereum address and immediately forward the Ether to the returned address.

Alternatively and more securely, users may register their identity within a “User Identity Registry” smart contract. The UIR smart contract can then be used to perform a client lookup directly from the blockchain itself rather than relying on a global or locally scoped endpoint.

Additionally users and providers can leverage the power of uPort’s smart contract identity solutions or use ERC 725 identity contracts when available [13, 18].

Application Identity Registry (AIR)

The SDK and API endpoints can be consumed by any number of authenticated clients who have a valid authentication key to the API endpoints. When an application provider registers for the KryptoPal SDK, they must register their identity in KryptoPal's Application Identity Registry. In doing so, when global API endpoints receive requests proxied through application providers, their identity is first validated by reading from the blockchain. An application consumer using a KryptoPal-Powered application can proxy their request through the provider, who in turn signs a message using a key associated with an authenticated address defined in the AIR contract. So long as the provider is validly authenticated, the endpoint will process the request. In addition, applications existing within AIR are rewarded a portion of all fees collected through the KryptoPal platform (defined in the "Business Proposition" paper).

Each of the solutions proposed in this section serve as pluggable building blocks that can be integrated into existing applications to begin introducing the world of blockchain to its user base.

Summary

KryptoPal's mission is simple: Bridge mainstream businesses and applications to the world of cryptocurrency consumers.

With our game-changing SDK and API, KryptoPal will provide instant access to groundbreaking blockchain technologies by developing a seamless solution at the genesis layer of all applications, rather than individually at the edge. KryptoPal is prepared to bridge the gap by allowing anyone, anywhere, anytime, to transact seamlessly and easily. By using the KryptoPal platform, gone will be the days of needing to download an endless number of apps to satisfy your crypto needs. The applications you know and love can now seamlessly integrate cryptocurrency/ blockchain technology using our SDK, and allow you to easily transact in fiat currency or cryptocurrency with anyone across the globe. The potential uses for KryptoPal are many, and we're positioned to bring cryptocurrency, distributed ledger, and blockchain technology to everyone.

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