

# PiXL: Transforming Real Estate Investment

A breakthrough token and platform combining real estate and blockchain technology to open doors to secure, flexible, and lucrative property investments for everyone



# What is PiXL?



PiXL is a platform where you can own small fractions of real estate, called tokens, instead of purchasing an entire property. With PiXL, you:

- **Invest small amounts:** Enter the property market with as little as £1,000
- **Earn passive income:** Receive rental income monthly without managing the property
- **Sell anytime:** Liquidate your shares on a secure marketplace



## Fractional Ownership:

- Example: A luxury property in London is divided into 1,000 tokens. You buy 10 tokens and now own 1% of the property
- **Income:** If the property generates £120,000/year in rent, you earn £1,200/year
- **Flexibility:** Sell your tokens when prices rise, just like selling stocks

## Blockchain Security:

- Your ownership is secured on the blockchain, a digital ledger that ensures transparency and prevents tampering
  - Example: Like a digital bank statement, it shows every transaction and confirms your ownership
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# Why Choose PiXL?



## Access to Premium Properties:

- Invest in high-value properties without needing millions
- **Example:** Own a part of a Dubai skyscraper or a London penthouse

## Enhanced Liquidity:

- Unlike traditional real estate, you can trade your tokens quickly on a marketplace
- **Example:** Sell tokens instantly during a property boom for profit

## Low Risk, High Transparency:

- Blockchain ensures all transactions are traceable
- **Compliance:** We follow all legal regulations to protect your investment



# Examples to Reassure You

**Case Study 1:** Sarah invests minimum £1,000 in luxury apartment in Manchester. In 12 months:

- **Rental income:** £8/month (£96p/a)
- **Token value appreciation:** 15%
- **Total ROI:** ~25% in one year

**Case Study 2:** John invests £2,000 in student flats in Liverpool. In 12 months:

- **Rental Income:** £20/month (£240/year)
- **Token Value Appreciation:** 12% (£240)
- **Total ROI:** ~24% in one year

**Security in Action:** All transactions use smart contracts that automate income distribution, ensuring timely payments without manual intervention



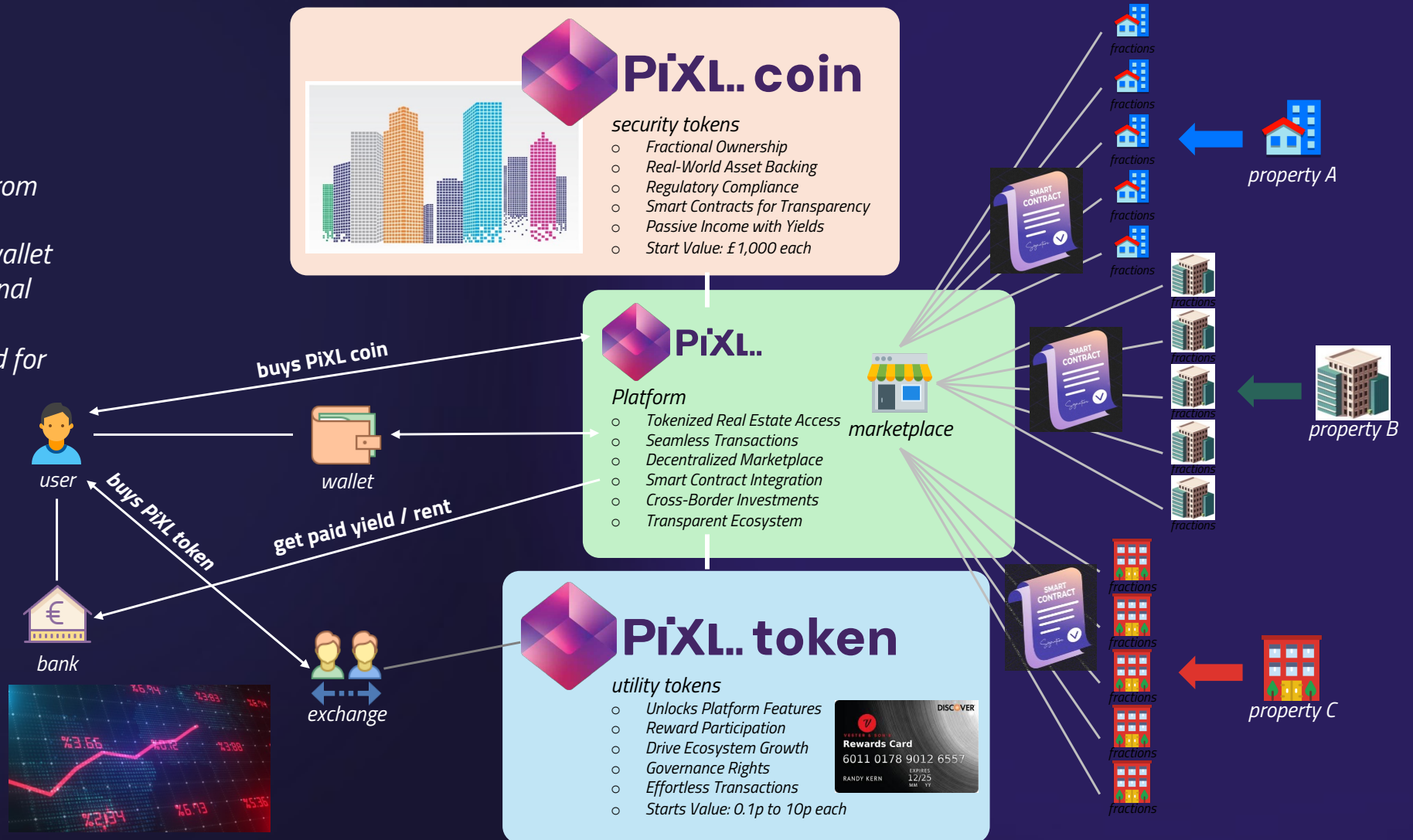


# Operations: How it works



## How it works:

- User joins PiXL platform
- It performs User ID&V and KYC
- Upon passing User connects wallet
- User buys **PiXL token** with Pounds from exchange where its listed
- User receives **PiXL token** tokens in wallet
- User picks property and buys fractional share receives **PiXL coin** in wallet
- User gets discount on fees as reward for having **PiXL token**
- User signs legals & smart contract
- **PiXL coin** transferred into wallet
- User receives yield / rent from ownership share monthly or yearly
- The Price of **PiXL coin** backed by the property can go up or down
- The Price of **PiXL token** backed on exchange can go up or down



# Architecture Overview



## A Scalable, Secure, and Compliant Tokenization Platform

### Front End

**Reactjs**

For user and admin interfaces (user dashboards, real estate listings, analytics and reporting on any device etc.)

### API Layer

**Restful**

To handle communication between the frontend, backend, and external systems (KYC services, oracles, etc.)

**KYC/AML**

**Payments**

**Auditing**

**Governance**

**Reporting**

**Analytics**

### Blockchain

**Polygon**

For EVM chain for tokenization and smart contracts

### Smart Contract

**Ethers.js**

Integration to facilitate blockchain interactions (token minting, transfers, & income distribution).

### Database

**MySQL**

For storing data related to assets, users, & transaction history

### Back End

**Node.js**

For server-side operations like tokenization workflows, transaction handling, and compliance integration

### Security

**JWT**

Implement encryption

**DDos Protection**

**SQL injection mitigation**

### Cloud

**AWS**

Containerization hosting using Kubernetes & Docker for deployment for scalability

# Platform Architecture Definition



**Front-End Architecture**

- The Front-End Architecture refers to the part of the system users directly interact with. It includes the user interface (UI) that allows investors and issuers to view and manage tokenized assets, track investments, and execute trades. Built with frameworks like React.js, it ensures a seamless, responsive, and user-friendly experience across devices.

**Back-End Architecture**

- The Back-End Architecture manages server-side operations such as tokenization, transaction processing, rewards mechanism for PiXL token & third-party integrations. Using Node.js, it ensures efficient & scalable performance, with APIs facilitating communication between the front-end, blockchain, and other services.

**Blockchain Layer**

- The Blockchain Layer is the underlying infrastructure enabling secure and transparent asset tokenization. Using Polygon (with ERC-20 standards for tokens), it handles smart contracts, token issuance, transfers, and corporate actions. It ensures immutability and decentralization, essential for trust in a tokenized platform.

**Compliance & KYC/AML**

- Compliance & KYC/AML (Know Your Customer/Anti-Money Laundering) refers to the processes and tools integrated into the platform to verify investor identities and ensure all transactions comply with legal and regulatory requirements. It automates KYC checks and continuous AML monitoring to prevent fraud and ensure global compliance.

**Payments and Tokenization**

- This refers to the platform's integration with Truelayer for fiat payments and PiXL tokens for tokenized cash payments. It handles transactions between investors and issuers, automating token issuance upon successful payment, and ensures secure and traceable transactions using smart contracts.

**Cap Table & Audit Trail**

- The Cap Table records token ownership distribution in real time, reflecting all token-related events such as issuance, transfers, and corporate actions. The Audit Trail is an immutable record of all transactions, providing transparency and accountability for regulators, auditors, and compliance agents.

**Secondary Markets**

- Secondary Markets provide liquidity by allowing investors to trade tokenized assets on decentralized exchanges (DEX) or over-the-counter (OTC) platforms. These markets enable investors to buy and sell tokens, offering flexibility and real-time pricing through decentralized financial protocols (DeFi).



**Authentication, Authorization, and Accounting**

- This ensures secure user login, role-based access control (RBAC), and session management using technologies like OAuth 2.0 and JWT. It controls user permissions and manages access to different platform features, ensuring that users can only perform actions they are authorized for.

**Monitoring & Logging**

- Monitoring & Logging involves tracking system performance, security events, and error logs in real time using tools like AWS CloudWatch and Datadog. It allows administrators to proactively address issues and maintain the platform's health by detecting and resolving problems before they affect users.

**Scalability & Load Balancing**

- This ensures the platform can handle increasing traffic and user load. AWS Auto Scaling and Kubernetes are used to automatically adjust resources as needed, while load balancing distributes traffic across servers, ensuring high performance and reliability.

**Disaster Recovery**

- The Disaster Recovery strategy involves automated multi-region backups and failover mechanisms to ensure business continuity. Regular testing ensures that in the event of a failure, data can be restored quickly and the system can resume normal operations with minimal disruption.

**Data Privacy and GDPR Compliance**

- Data Privacy and GDPR Compliance ensures that personal data is securely stored and handled in compliance with the General Data Protection Regulation (GDPR) and other privacy laws. End-to-end encryption, data access controls, and user consent mechanisms ensure data protection and privacy.

**Security & Governance**

- Security & Governance ensures platform adheres to security standards with practices like multi-factor authentication (MFA), encryption, DDoS protection, and regular security audits. Governance ensures that all platform operations, from smart contract execution to token issuance, are conducted in compliance with legal and regulatory frameworks.

**Token Liquidity and Market Making**

- Token Liquidity and Market Making refers to creating liquidity for tokenized assets by using Automated Market Maker (AMM) protocols and liquidity pools. Investors can contribute to liquidity pools on decentralized exchanges (DEX) and earn rewards, ensuring there is enough liquidity for token trading on the platform.

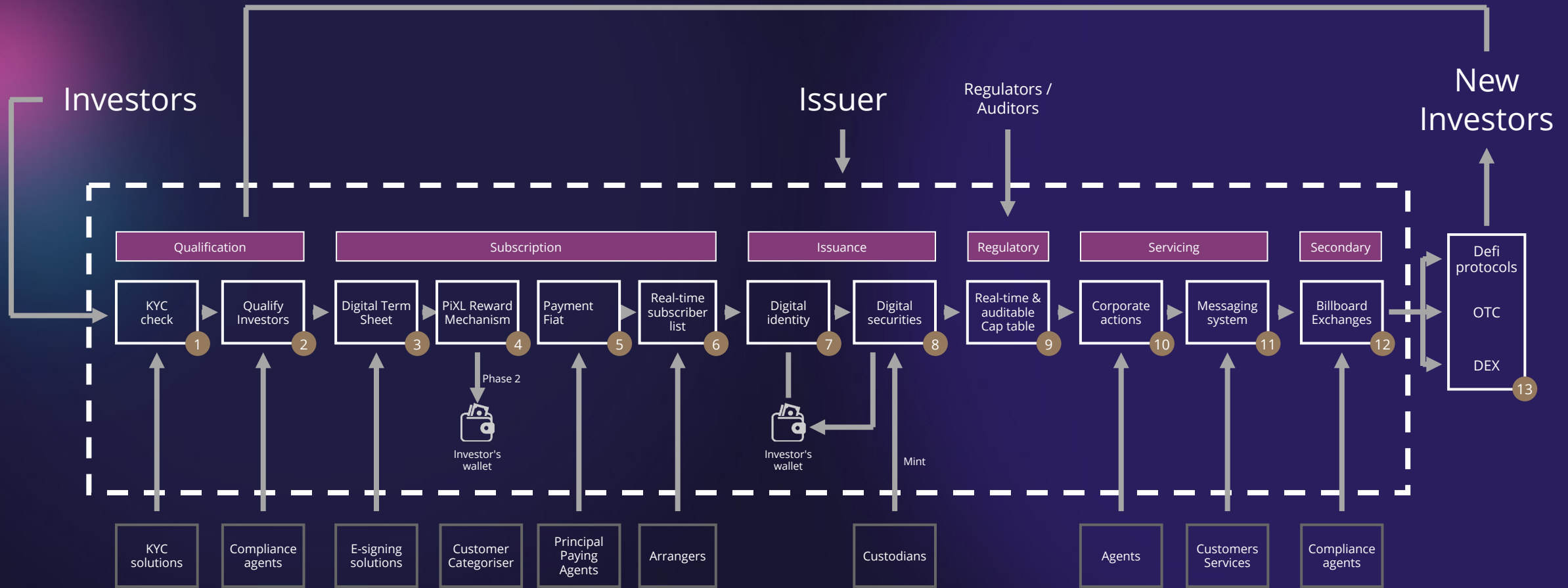


# Platform Architecture Technology



Front-End Architecture	Back-End Architecture	Blockchain Layer	Compliance & KYC/AML	Payments and Tokenization	Cap Table & Audit Trail	Secondary Markets
Technology Stack: React.js, HTML5, CSS3, JavaScript	Technology Stack: Node.js, Express.js	Technology: Polygon, ERC-20, AWS Blockchain	KYC Provider: Sumsub	Fiat Gateway Provider: Truelayer; Token: PiXL	Technology: AWS Blockchain	Integration to: DEX & OTC
<p>User Interface (UI):</p> <ul style="list-style-type: none"> <li>Provides a seamless and responsive UI for investors and issuers to manage their accounts, view tokenized assets, track investments, and execute trades.</li> </ul> <p>User Dashboard:</p> <ul style="list-style-type: none"> <li>Displays portfolio performance, token balances, real-time data on transactions, and notifications about corporate actions or regulatory updates.</li> </ul> <p>Integration:</p> <ul style="list-style-type: none"> <li>Connects with backend services via API to fetch real-time data, transaction history, and compliance updates.</li> <li>Integration with payment gateways (Truelayer for fiat, blockchain for PiXL) for secure transactions.</li> </ul>	<p>Core Functions:</p> <ul style="list-style-type: none"> <li>Handles token issuance, payment processing, and transaction management.</li> <li>Implements business logic for corporate actions (dividends, buybacks) and investor onboarding (KYC/AML).</li> </ul> <p>Reward Mechanism:</p> <ul style="list-style-type: none"> <li>Manages PiXL reward system, including token staking, tiered benefits, and automated reward distribution based on platform engagement.</li> </ul> <p>Smart Contract Management:</p> <ul style="list-style-type: none"> <li>Facilitates the deployment and interaction with Polygon-based smart contracts, managing minting, transfers, and ownership tracking.</li> </ul> <p>API Layer:</p> <ul style="list-style-type: none"> <li>RESTful API to handle requests between the front-end, blockchain, and third-party services (KYC, payments).</li> </ul>	<p>Smart Contracts:</p> <ul style="list-style-type: none"> <li>Written in Solidity for secure token issuance, transfers, and automated income distribution (e.g., dividends, rental income).</li> <li>Manages all token events, including minting, transfers, staking, and corporate actions.</li> </ul> <p>Polygon Layer:</p> <ul style="list-style-type: none"> <li>Provides low-cost, fast transaction processing, ensuring scalable token issuance and transfers.</li> <li>Tokens are minted and managed on Polygon, benefiting from low fees and high throughput.</li> </ul> <p>AWS Blockchain:</p> <ul style="list-style-type: none"> <li>Stores immutable records of transactions (token creation, transfers, payments, compliance checks), ensuring transparency and a secure audit trail for regulators.</li> </ul>	<p>Process:</p> <ul style="list-style-type: none"> <li>Investors are automatically verified during onboarding via Sumsub's API, including identity verification, background checks, and sanction list screening.</li> <li>Continuous monitoring of investors ensures ongoing compliance with AML regulations.</li> </ul> <p>Automation:</p> <ul style="list-style-type: none"> <li>Results from Sumsub are directly processed by the platform, updating investor status in real time. Investors are automatically flagged or approved.</li> <li>All KYC/AML data is securely stored on the blockchain to maintain an audit trail.</li> </ul>	<p>Fiat Integration:</p> <ul style="list-style-type: none"> <li>Truelayer API for processing fiat payments (e.g., GBP, EUR).</li> </ul> <p>Tokenized Cash:</p> <ul style="list-style-type: none"> <li>PiXL tokens can be used for investment and payments.</li> </ul> <p>Smart Contracts for Payment:</p> <ul style="list-style-type: none"> <li>Automatically trigger token issuance upon successful payment, with real-time updates to cap tables and investor wallets.</li> <li>Payments and transactions are recorded on the AWS blockchain to ensure full traceability.</li> </ul>	<p>Cap Table:</p> <ul style="list-style-type: none"> <li>The platform automatically updates the cap table in real time to reflect changes in token ownership due to issuance, transfers, and corporate actions.</li> <li>Provides full visibility to issuers, investors, and compliance agents.</li> </ul> <p>Audit Trail:</p> <ul style="list-style-type: none"> <li>All transactions are recorded on the AWS blockchain, providing a transparent, immutable audit trail for regulatory review and investor protection.</li> </ul>	<p>Billboard Exchanges:</p> <ul style="list-style-type: none"> <li>Integrates with decentralized exchanges (DEX) and OTC markets to provide liquidity for tokenized assets.</li> <li>Smart contracts manage trades, ensuring secure peer-to-peer transactions and updating the cap table in real time.</li> </ul> <p>DeFi Integration:</p> <ul style="list-style-type: none"> <li>Enables staking, collateralization, and yield farming for token holders, leveraging liquidity pools on DEX platforms.</li> <li>Automated compliance checks ensure adherence to KYC/AML rules for all DeFi transactions.</li> </ul>
Authentication, Authorization, and Accounting	Monitoring & Logging	Scalability & Load Balancing	Disaster Recovery	Data Privacy and GDPR Compliance	Security & Governance	Token Liquidity and Market Making
Tech Stack: OAuth 2.0, JWT, Role-Based Access Control (RBAC)	Tech Stack: AWS CloudWatch, Datadog, Real-time Logging	Tech Stack: AWS Auto Scaling, Kubernetes, Caching (Redis)	Tech Stack: AWS Snapshots, Multi-region Backup, Failover Mechanisms	Tech Stack: Data Encryption, GDPR-compliant APIs, User Data Controls	Tech Stack: MFA, DDoS protection & SQL injection mitigation	Tech Stack: Automated Market Maker (AMM), Liquidity Pools, DEX Integration
<p>AAA:</p> <ul style="list-style-type: none"> <li>Secure user authentication with OAuth 2.0, session management via JWT, and RBAC to control access levels, ensuring users have appropriate permissions for platform actions</li> </ul>	<p>Monitoring and Logging:</p> <ul style="list-style-type: none"> <li>Continuous monitoring with AWS CloudWatch and Datadog, including real-time logging for performance tracking, error detection, and proactive issue resolution</li> </ul>	<p>Scalability:</p> <ul style="list-style-type: none"> <li>AWS Auto Scaling &amp; Kubernetes ensure the platform handles increasing user loads, with Redis caching improving response and performance under high traffic conditions.</li> </ul>	<p>Disaster Recovery:</p> <ul style="list-style-type: none"> <li>Automated multi-region AWS backups, failover mechanisms for minimal downtime, and regular testing to ensure fast, reliable data restoration.</li> </ul>	<p>Data Privacy:</p> <ul style="list-style-type: none"> <li>End-to-end encryption safeguards personal data, with GDPR-compliant APIs ensuring secure handling of user information. Users have control over their data, with mechanisms for data access, correction, and deletion.</li> </ul>	<p>Security:</p> <ul style="list-style-type: none"> <li>End-to-end encryption for all communications between users &amp; platform and multi-factor authentication (MFA), DDoS protection, &amp; SQL injection mitigation.</li> </ul> <p>Governance:</p> <ul style="list-style-type: none"> <li>Smart contracts enforce rules for token issuance, transfers, and corporate actions.</li> <li>Regular audits are conducted to ensure compliance with security &amp; reg standards.</li> </ul>	<p>Token Liquidity:</p> <ul style="list-style-type: none"> <li>Liquidity pools and AMM on decentralized exchanges (DEX) ensure market liquidity, with investors contributing to pools and earning fees or rewards, promoting seamless trading of tokenized assets.</li> </ul>

# Platform Ecosystem and Process Flow



# Qualification **1** KYC Check



**Stakeholders:** Investors, KYC Provider (Sumsub), Compliance Agents

**Process Details:**

- Investors submit their identity information and required documentation through the platform.
- The platform integrates with Sumsub via API to automatically conduct KYC/AML checks.
- Sumsub returns results (e.g., pass, fail, or further action required) in real-time.
- If the KYC is successfully completed, the investor moves forward in the qualification process. If flagged, the case is sent for further review by compliance agents.

**Technology:**

- **API Integration:** Seamless connection with Sumsub for KYC/AML checks.
- **Blockchain Storage:** Store the KYC verification on AWS blockchain for transparency and audit purposes.

**Automation:**

- Results from Sumsub are directly processed by the platform, updating the investor status automatically (approved or flagged).



# Qualification **2** Qualify Investors

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**Stakeholders:** Investors, Issuers, Compliance Agents

**Process Details:**

- Once KYC is completed, the investor's financial status and investment background are evaluated. Criteria such as investor accreditation or other legal requirements are assessed.
- A rule-based system determines the investor's eligibility for different investment tiers and opportunities (e.g., size of investments, access to exclusive projects).
- Compliance agents receive notifications only if special cases arise (e.g., flagged high-risk investors or incomplete profiles).

**Technology:**

- **Rule-Based Compliance Engine:** Automatically assesses the investor's financial status against preset rules (e.g., accredited investor status, risk profile).
- **PiXL Token Integration:** After qualification, investors can use the PiXL token or fiat (via Truelayer) for payments.

**Automation:**

- Investor qualification is handled automatically based on compliance rules. Approved investors are granted access to investment opportunities, while flagged cases are directed to compliance agents for manual review.
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# Subscription **3** Digital Term Sheets



**Stakeholders:** Investors, Issuers, Compliance Agents, Payment Providers (Truelayer for fiat), Blockchain Integration for PiXL

## **Process Details:**

- After issuance, investors can subscribe to asset offerings through digital term sheets, which outline the details of the investment opportunity (e.g., token allocation, rights, expected returns).
- Investors review and agree to the terms via a digital signing process, confirming their participation in the token offering.
- Once subscribed, investors are added to a real-time subscriber list, which tracks their commitment to purchase tokens.
- Investors can choose to pay using PiXL tokens or fiat (via Truelayer), based on their preference.
- Upon successful payment, the platform automatically allocates the corresponding tokens to the investor's wallet and updates the cap table with the new ownership structure.

## **Technology:**

- **Digital Term Sheet Generation:** Automatically generated for each investment opportunity, token rights, investment size, and terms.
- **Smart Contracts:** Govern subscription process, ensuring once terms are signed & payments made, tokens are issued, and ownership is tracked transparently.
- **PiXL Token Integration:** Investors can use PiXL tokens as payment, with transactions recorded on the AWS blockchain.
- **Truelayer Integration:** Facilitates fiat payments, securely processing transactions and updating the platform with payment confirmations.
- **Blockchain for Subscription:** Subscription details, token allocation, and the real-time subscriber list are recorded on the AWS blockchain for transparency.

## **Automation:**

- **Automatic Term Sheet Creation:** Digital term sheets are auto-generated based on issuer inputs and investor selection.
- **Payment Integration:** Platform automates payments, whether in PiXL or fiat, and ensures token distribution upon confirmation.
- **Cap Table Updates:** Cap table is automatically updated in real time with new investors' holdings, ensuring complete visibility.

# Subscription **4** PiXL Mechanism (Phase 2)



**Stakeholders:** Investors, Issuers, Platform Administrators

## **Process Details:**

- The PiXL token is a utility/governance token, functioning like a rewards or points system. Investors purchase PiXL tokens to access platform benefits, reduced fees, governance rights, and other perks.
- PiXL tokens don't represent financial securities or asset ownership but provide value through platform utilities such as discounted transaction fees, access to exclusive investment features, and participation in governance.
- Investors purchase PiXL tokens using fiat (via Truelayer) or other cryptocurrencies, which are then credited to their wallets.
- The platform uses a Customer Categorizer, which evaluates the investor's engagement and holdings of PiXL tokens to determine the level of rewards or benefits they are entitled to. This automated system ensures investors are properly categorized based on their PiXL stake.
- The PiXL reward mechanism incentivizes engagement by offering tiered benefits based on the amount of PiXL tokens held or staked.

## **Technology:**

- **Smart Contracts:** Manage PiXL token purchases, staking, and reward distribution, ensuring the correct benefits are allocated based on the investor's categorization.
- **Blockchain (Polygon):** All PiXL token transactions, reward entitlements, and governance votes are securely recorded on the Polygon blockchain.

## **Automation:**

- **Automatic Rewards Distribution:** The Customer Categorizer determines reward tiers, automatically unlocking benefits such as reduced fees based on the investor's PiXL holdings.
- **Governance Participation:** PiXL token holders can automatically participate in platform governance, voting on key decisions according to their token holdings.



# Subscription **5** Payment - Fiat



**Stakeholders:** Investors, Issuers, Payment Providers (Truelayer), Compliance Agents, Auditors

## **Process Details:**

- After investors subscribe to an offering and sign the digital term sheet, they can choose to pay for their tokens using fiat currencies (e.g., GBP, EUR).
- The platform integrates with Truelayer to securely handle fiat payments. Investors are directed to complete the payment through their preferred bank account or payment method.
- Once the payment is processed, Truelayer confirms the transaction with the platform in real time, and the corresponding amount is deducted from the investor's account.
- Upon successful payment, the platform automatically issues the appropriate number of tokens to the investor's wallet and updates the cap table to reflect the new ownership.
- An automated audit trail is created, recording the details of the fiat transaction, including the amount, time, and investor identity, ensuring full transparency and compliance.

## **Technology:**

- **Truelayer API:** Handles secure fiat payments, facilitating seamless bank transfers or card payments.
- **Payment Confirmation:** Truelayer's API sends real-time payment confirmation to platform, triggering next steps in token issuance process.
- **Smart Contracts:** Govern the issuance of tokens upon successful payment, ensuring transparency and security in the allocation of digital assets.
- **Blockchain Record-Keeping (AWS):** Every fiat payment is securely recorded on the AWS blockchain, creating an immutable audit trail for compliance and future auditing purposes.

## **Automation:**

- **Payment Processing:** Payments via fiat are automatically routed through Truelayer, and once confirmed, the platform handles the token issuance without manual intervention.
- **Real-Time Updates:** Cap tables and ownership records are automatically updated once the payment is confirmed, providing issuers and investors with real-time transparency.
- **Compliance Checks:** Automated systems ensure that every fiat transaction complies with AML regulations, and all payment data is securely stored for regulatory review.

# Subscription **6** Real-Time Subscriber List



**Stakeholders:** Investors, Issuers, Compliance Agents, Auditors

## **Process Details:**

- Once investors subscribe to a token offering and complete their payment (via PiXL or fiat), they are automatically added to a real-time subscriber list.
- The subscriber list provides an up-to-date record of all investors who have committed to purchasing tokens, including details such as the number of tokens they are purchasing, their payment status, and the type of payment used (PiXL or fiat).
- This list is accessible to both issuers and compliance agents, providing transparency into the subscription process and enabling easy tracking of all participating investors.
- The list is continually updated in real time, reflecting any changes in subscriptions, such as new investors joining or payments being processed.
- Compliance agents can monitor the subscriber list for any discrepancies or compliance issues, ensuring that only qualified investors are participating.

## **Technology:**

- **Real-Time Database:** The subscriber list is powered by a live database that tracks investor commitments and payment confirmations in real time.
- **Smart Contracts:** Govern the process, ensuring that once an investor subscribes and makes payment, they are automatically added to the list and their information is securely stored.
- **Blockchain (AWS):** All subscription data, including the real-time subscriber list, is stored on AWS blockchain to ensure transparency and immutability for auditing and compliance purposes.

## **Automation:**

- **Automatic Updates:** The platform automatically updates the subscriber list in real time as new investors subscribe, make payments, or cancel their subscriptions.
- **Audit Trail:** An immutable record of each investor's subscription is created and stored on the blockchain, providing a clear and transparent audit trail for regulators and auditors.
- **Compliance Monitoring:** The subscriber list integrates with the compliance engine, allowing for automated checks to ensure that all investors meet the required qualifications and that their payments are compliant with AML/KYC regulations.

# Issuance **7** Digital Identity



**Stakeholders:** Investors, Issuers, Compliance Agents, Wallet Providers (MetaMask), Blockchain Integration

## Process Details:

- As part of the issuance process, investors are assigned a digital identity within the platform. This identity is securely linked to their KYC verification and investment profile.
- The digital identity is stored on the blockchain, ensuring immutability and transparency while maintaining privacy for the investor.
- Investors' digital identities are associated with their MetaMask wallet (the platform's default wallet), where all tokenized assets (e.g., PiXL tokens or fractional real estate ownership tokens) are securely stored.
- The platform uses smart contracts to ensure that any transactions, whether purchasing tokens or transferring ownership, are linked to the investor's digital identity and wallet, providing an auditable trail.
- Investors have full control of their wallet, allowing them to manage, store, and trade their tokens. Any activity, such as token transfers / sales, is automatically updated on blockchain, maintaining transparent & secure record.
- The digital identity system ensures that only verified, compliant investors are able to participate in token offerings and transactions, while the wallet system provides a secure and easy way for investors to manage their holdings.

## Technology:

- **Digital Identity Management:** Each investor is issued a unique digital identity that is securely tied to their KYC profile and stored on the AWS blockchain.
- **MetaMask Wallet Integration:** Investors' tokens are stored and managed using MetaMask, the default wallet for handling all tokenized assets on the platform.
- **Smart Contracts:** Facilitate transactions and ensure that all actions (e.g., token purchases, transfers) are linked to the investor's digital identity and wallet.
- **Blockchain (AWS):** All digital identities and wallet activities are recorded on the AWS blockchain, ensuring a transparent, tamper-proof audit trail.

## Automation:

- **Automatic Identity Linking:** Once an investor completes KYC, their digital identity is automatically created and linked to their wallet.
- **Secure Transactions:** All transactions involving the investor's tokens are securely linked to their digital identity and wallet, ensuring traceability and compliance.
- **Real-Time Updates:** The platform provides real-time updates to the blockchain for all investor activity, including token transfers and sales.



# Issuance 8 Digital Securities



**Stakeholders:** Investors, Issuers, Compliance Agents, Blockchain and Wallet Providers (MetaMask)

## Process Details:

- Once an investor subscribes to an offering and completes the payment process, the platform begins the process of issuing digital securities.
- Digital securities represent fractional ownership in the tokenized real estate or income streams and are backed by the underlying asset.
- The platform uses smart contracts to mint these digital securities, ensuring that each token is securely created, allocated, and tied to the specific asset.
- Tokens are minted based on the predefined terms of the offering (e.g., number of tokens, ownership distribution) and are immediately assigned to the investor's MetaMask wallet.
- The minting process is fully automated and transparent, ensuring that token creation follows all predefined rules, including ownership caps and compliance regulations.
- Investors can then manage their digital securities directly within their wallets, where they can hold, trade, or transfer them, depending on the platform's marketplace options.

## Technology:

- **Smart Contracts:** Handle the minting of digital securities based on the terms of the asset offering. These smart contracts ensure that each token represents fractional ownership and is securely minted and issued.
- **MetaMask Wallet Integration:** Once minted, the digital securities are automatically transferred to the investor's MetaMask wallet, ensuring immediate access and control.
- **Blockchain (AWS):** All minting and token issuance activities are recorded on the AWS blockchain, ensuring a secure and immutable audit trail.
- **PiXL Token Integration:** If applicable, PiXL tokens can be used to facilitate payments and the corresponding minting of digital securities.

## Automation:

- **Automated Minting:** Smart contracts automatically mint digital securities once payments are confirmed, ensuring accurate issuance and compliance with the offering terms.
- **Token Allocation:** Upon minting, tokens are immediately and securely transferred to the investor's wallet without manual intervention.
- **Real-Time Cap Table Updates:** The platform's cap table is automatically updated in real time to reflect the newly minted securities and their associated ownership structure.

# Regulatory **9** Real-time & Auditable Cap table



**Stakeholders:** Investors, Issuers, Compliance Agents, Auditors

## **Process Details:**

- The cap table (capitalization table) is a real-time record of ownership in the tokenized assets on the platform. It reflects the distribution of tokens across investors and provides transparency into the current ownership structure.
- Every time tokens are issued, traded, or transferred; the cap table is automatically updated to reflect the new ownership.
- The auditable cap table tracks all ownership changes, ensuring that compliance agents and auditors can review the history of token movements and validate the accuracy of the ownership structure at any given time.
- The platform uses smart contracts to ensure that every transaction related to token issuance, transfers, and trades is securely recorded on the blockchain.
- The cap table provides full transparency to issuers and compliance agents, who can easily access the real-time data to monitor compliance with investment caps, regulatory restrictions, and ownership limits.
- Auditors have access to an immutable audit trail of all token-related activities, ensuring that the platform meets the highest standards of regulatory compliance.

## **Technology:**

- **Smart Contracts:** Automatically update the cap table based on token issuance, transfers, and trades, ensuring that ownership is always accurately reflected.
- **Blockchain (AWS):** The cap table is stored on the AWS blockchain, providing an immutable and transparent record of ownership changes.
- **Real-Time Data:** The platform delivers real-time updates to the cap table, ensuring that issuers, investors, and compliance agents have up-to-date information on ownership distribution.

## **Automation:**

- **Real-Time Updates:** Every token-related action (issuance, transfer, trade) automatically updates the cap table in real time, without manual intervention.
- **Audit Trail:** The platform maintains a comprehensive audit trail of all changes to the cap table, which can be accessed by auditors for regulatory reviews.
- **Compliance Monitoring:** The cap table integrates with the platform's compliance systems to ensure that all ownership changes are compliant with regulatory requirements.

# Servicing **10** Corporate actions



**Stakeholders:** Investors, Issuers, Compliance Agents, Custodians, Principal Paying Agents

## **Process Details:**

- Corporate actions are events initiated by issuers that affect tokens & investors: dividend payments, yield payments, token buybacks, or asset liquidation.
- The platform automates the execution of corporate actions through smart contracts, ensuring that they are processed accurately and in compliance with the terms set out in the offering.
- For events such as dividend payments or interest distributions, smart contracts automatically calculate and distribute payments to investors based on their proportional ownership of the tokenized assets.
- For actions like buybacks or liquidations, the smart contracts ensure that the tokens are redeemed or adjusted according to predefined rules, and the cap table is updated accordingly.
- Investors are notified of upcoming corporate actions through the platform's messaging system, ensuring full transparency and allowing them to track any impact on their token holdings.
- Corporate actions are securely recorded on the AWS blockchain, ensuring an immutable and auditable trail for compliance agents and auditors to verify that all actions were executed according to the terms.

## **Technology:**

- **Smart Contracts:** Automate corporate actions like payments, buybacks, and liquidations, ensuring they are executed in line with the terms of the token offering.
- **Blockchain (AWS):** All corporate actions and related transactions are recorded on the AWS blockchain, providing a transparent and secure audit trail.
- **Payment Gateways:** Integration with payment systems (e.g., Truelayer for fiat or PiXL tokens) for the automatic distribution of payments related to corporate actions.

## **Automation:**

- **Automated Payments:** Smart contracts automatically handle dividend or interest payments, ensuring they are distributed to investors based on their ownership share.
- **Buyback & Redemption:** Token buybacks or redemptions are executed automatically, with the cap table and investor balances updated in real time.
- **Notifications:** Investors receive automated notifications of corporate actions through the messaging system, keeping them informed of any changes affecting their tokens.



# Servicing **11** Messaging system



**Stakeholders:** Investors, Issuers, Compliance Agents, Platform Administrators

## **Process Details:**

- The messaging system is an integrated communication platform that allows investors, issuers, and compliance agents to receive real-time notifications and updates regarding their token holdings, corporate actions, transactions, and compliance-related matters.
- Investors are automatically notified of key events such as corporate actions (e.g., dividend payments, token buybacks), subscription confirmations, payment receipts, and any changes in their ownership status.
- Issuers can use the messaging system to send updates to investors about asset performance, upcoming corporate actions, or regulatory changes that may impact token holders.
- The platform also uses the messaging system to communicate compliance notifications, such as reminders for KYC re-verification or flagging any suspicious activity that requires review.
- The messaging system is built to handle multiple channels, including email, SMS, and in-app notifications, ensuring that stakeholders can be reached through their preferred communication method.
- Communication through messaging system is secure and encrypted, ensuring that sensitive information related to transactions or compliance is protected.

## **Technology:**

- **In-App Messaging and Notifications:** Integrated directly into the platform, allowing users to receive real-time updates on their dashboard.
- **Email and SMS Integration:** Allows users to receive notifications via their preferred communication method.
- **Encryption:** Ensures that all communications are secure, protecting sensitive information shared through the system.
- **Blockchain Integration:** Relevant updates related to transactions, ownership changes, or compliance issues are securely logged on the AWS blockchain for audit purposes.

## **Automation:**

- **Automated Notifications:** The system automatically sends notifications related to transactions, corporate actions, compliance updates, and general investor communications without manual intervention.
- **Real-Time Updates:** Investors and issuers receive updates instantly, ensuring they are always informed of important events related to their investments.
- **Compliance Alerts:** Compliance agents receive automated alerts when any regulatory issues arise, such as flagged transactions or pending KYC renewals.

# Secondary **12** Billboard Exchanges



**Stakeholders:** Investors, Issuers, Secondary Market Platforms, Compliance Agents, Auditors

## **Process Details:**

- The platform integrates with billboard exchanges, which are secondary market platforms where investors can trade their tokenized assets, such as fractional ownership tokens or yield-based tokens, with other investors.
- Investors can list their tokens for sale on these billboard exchanges, providing liquidity and enabling other investors to purchase tokens directly from current holders.
- The platform offers real-time price discovery on the billboard exchanges, allowing investors to see market demand and pricing trends before making buy or sell decisions.
- Smart contracts govern the entire trading process, ensuring that token transfers, payments (PiXL or fiat), and cap table updates are handled securely and transparently.
- Billboard exchanges provide issuers with insights into the secondary market activity related to their tokenized assets, allowing them to track ownership changes and market dynamics.
- Compliance agents have access to the trading data on the billboard exchanges, ensuring that all trades comply with KYC/AML regulations and that transactions are properly recorded for audit purposes.

## **Technology:**

- **Smart Contracts:** Facilitate secure trading on the billboard exchanges, automatically handling the transfer of tokens, payments, and updates to the cap table.
- **Real-Time Price Discovery Tools:** Integration with data oracles for up-to-date pricing information on token trades.
- **Blockchain (AWS):** All trades, ownership changes, and payments are recorded on the AWS blockchain, providing a transparent and immutable audit trail.
- **Integration with External Exchanges:** The platform can integrate with existing billboard exchanges or create its own marketplace for trading tokenized assets.

## **Automation:**

- **Automated Trades:** The platform automates the process of listing, buying, and selling tokens on the billboard exchanges, ensuring seamless transactions without manual intervention.
- **Price Discovery:** Real-time market data is automatically updated, giving investors the latest pricing information for tokens listed on the exchange.
- **Compliance Monitoring:** All trades are automatically checked for compliance with KYC/AML regulations, ensuring that only qualified and verified investors participate in the secondary market.

**Stakeholders:** Investors, Issuers, Decentralized Exchanges (DEX), OTC Platforms, Liquidity Providers, Compliance Agents

**Process Details:**

- The platform integrates with DeFi protocols, enabling token trading via Over-the-Counter (OTC) markets or Decentralized Exchanges (DEX).
- OTC trading allows investors to execute large trades privately without impacting public market prices, useful for high-value transactions.
- DEX provides peer-to-peer trading without intermediaries, secured by smart contracts for transparency and safety.
- Both OTC and DEX options enable investors to trade or use tokenized assets for loans, staking, or yield farming, benefiting from DeFi's liquidity and flexibility.
- Liquidity pools on DEX allow investors to enhance market liquidity and earn rewards or fees.
- All OTC and DEX transactions are securely executed through smart contracts and recorded on the blockchain.
- Compliance agents monitor OTC and DEX activities to ensure compliance with KYC/AML regulations, providing a audit trail.

**Technology:**

- **Smart Contracts:** Facilitate secure, automated trading, staking, and liquidity management on OTC and DEX platforms.
- **Blockchain (AWS):** All DeFi protocol transactions, including trades, collateralization, and staking, are recorded on the AWS blockchain to provide a transparent and immutable audit trail.
- **Liquidity Pools:** Integration with liquidity pools on DEX platforms to increase market liquidity for tokenized assets.
- **DEX and OTC Integration:** The platform connects with external DEXs and OTC platforms to allow seamless trading and collateralization of assets.

**Automation:**

- **Automated Trades on DEX:** Smart contracts automatically execute trades on DEX platforms, ensuring transparent and secure peer-to-peer transactions.
- **OTC Deals:** Large transactions on OTC markets are facilitated through automated agreements, ensuring compliance with market rules and regulatory requirements.
- **Compliance Monitoring:** The platform automatically checks all DeFi transactions for compliance with KYC/AML regulations, ensuring that participants meet the necessary qualifications.



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