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Breaking the Chain of Shared Passwords: Redefining Subscription Access With Blockchain

Whitepaper

An RPG Company

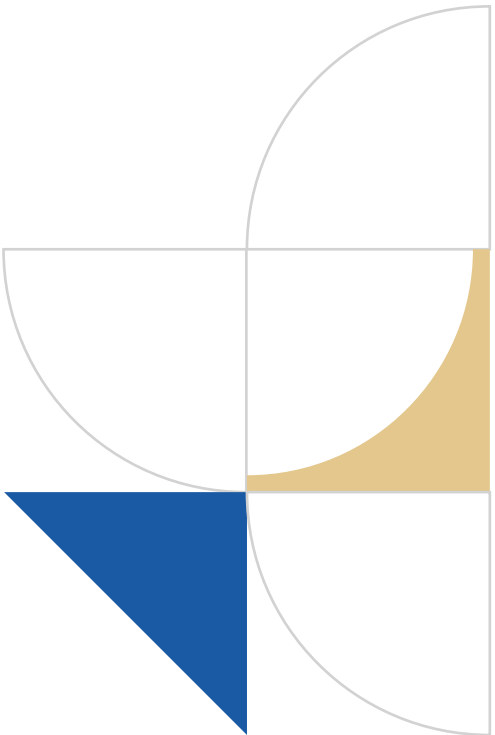
The subscription model has become a cornerstone of modern commerce, with a global market exceeding $542 billion by 2023[1]. This shift offers significant advantages for businesses (predictable revenue streams) and consumers (flexible access, value-adds). However, challenges like customer churn (up to 30 percent annually) and revenue loss due to password sharing threaten its full potential.

Blockchain technology presents an exciting opportunity to address these issues. By leveraging its secure and decentralized nature, blockchain can enhance:

- **Revenue integrity:** Reduce losses from password sharing and account hacking
- **Operational efficiency:** Streamline payment processing and automate recurring billing

The technology paves the way for a more secure and efficient subscription model, fostering long-term growth for businesses and consumers.

This is what we are exploring in this paper.



What are the business challenges we are trying to solve?

The issue at hand pertains to the impact of password sharing on the revenue model of streaming services.

Password sharing significantly impacts streaming services' bottom line and hinders strategic decision-making. Addressing this issue through innovative solutions is crucial for sustainable growth in the streaming market.

Users sharing their account credentials with others introduces a dynamic where the positive effects of increased viewer numbers are weighed against the negative consequences of lost revenue opportunities. The various challenges are as follows:

A. Market impact:

- **Lost revenue:** The global streaming market (valued at $89 billion in 2022) could be significantly larger without password sharing. Companies like Netflix report losing up to 50 percent of potential revenue due to this practice.
- **Reduced ARPU (average revenue per user):** When multiple users access a single account, the service captures revenue from only one subscriber, diminishing the value of each user.

B. Strategic challenges:

- **Inaccurate subscriber metrics:** Password sharing distorts user base data, hindering content recommendations and strategic growth decisions.
- **Customer churn:** Users who share passwords with non-paying viewers may feel less invested in the service, leading to higher churn rates.

C. Operational challenges:

- **Security risks:** Shared passwords increase the risk of data breaches and unauthorized access, impacting customer trust and brand reputation.
- **Usage tracking difficulty:** Tracking legitimate user activity and preferences becomes difficult, impacting targeted marketing efforts and content personalization.

D. Additional considerations:

- **Customer retention and churn:** High churn rates, where subscribers frequently cancel, affect steady revenue. Strategies to keep users engaged are crucial.
- **Payment processing and fraud:** Transaction fees from payment processors can cut into profits. Payment failures and fraud can also impact revenue and trust.

What is blockchain and why blockchain?

Blockchain is a decentralized and distributed digital ledger technology that records transactions across multiple computers to prevent retroactive alteration. It is best known as the technology behind cryptocurrencies like Bitcoin, but its applications extend far beyond digital currencies.

Unlike traditional databases controlled by a central authority, blockchain is maintained by a network of computers (nodes) holding a copy of the entire blockchain. This decentralization ensures enhanced security, transparency, and immutability, as transactions cannot be changed or deleted once recorded. Each block in the blockchain contains a cryptographic hash of the previous block, transaction data, and a timestamp, which collectively ensures the data's integrity. Transactions are verified by network nodes using consensus mechanisms like proof of work (PoW) or proof of stake (PoS), making the network robust against tampering and fraud.

Smart contracts, aka self-executing contracts with terms directly written into code, enhance blockchain's utility by automatically enforcing agreements when conditions are met.

The benefits of blockchain include increased security through cryptographic techniques, enhanced transparency with a public ledger, reduced transaction costs by eliminating intermediaries, and improved efficiency through decentralized processes.

However, blockchain faces scalability issues, mainly because every node processes every transaction, leading to high energy consumption associated with PoW mechanisms. Regulatory uncertainty also poses a challenge, as the legal framework for blockchain and cryptocurrencies is still evolving.

Additionally, widespread adoption requires overcoming technical, social, and economic barriers. Despite these challenges, blockchain's potential to revolutionize various industries by providing a secure, transparent, and efficient way to record and verify transactions remains significant. Its ability to ensure data integrity and decentralized nature make it a powerful tool for enhancing security and trust in digital transactions.

Blockchain's applications and benefits will likely expand as technology evolves, further solidifying its role in transforming traditional processes across multiple sectors.

What is a blockchain-based subscription model?

A blockchain-based subscription model leverages the power of blockchain technology to create a secure and automated system for managing subscriptions. Unlike traditional models relying on centralized databases, subscriptions are recorded on a distributed ledger accessible to everyone on the network, ensuring transparency and immutability. This means the record cannot be tampered with once a subscription is initiated, preventing issues like fraudulent cancellations or unauthorized access. Imagine it like a giant public record book specifically for subscriptions. This record book automatically verifies and stores information about subscribers and their plans. A blockchain-based subscription model offers a more secure, transparent, and efficient way to manage subscriptions for businesses and consumers.

How is a blockchain-based subscription model relevant here?

Blockchain technology offers several compelling advantages for subscription-based services, making it an attractive solution for addressing existing challenges.

By leveraging blockchain, subscription services can enhance security, ensuring transactions and customer data are protected through cryptographic methods. Hence, it reduces the risk of fraud and unauthorized access.

The decentralized nature of blockchain reduces the reliance on intermediaries, lowering costs and increasing efficiency.

Smart contracts, a key feature of blockchain, can automate subscription renewals and payments, eliminating the need for manual processing and reducing the risk of human error, thus decreasing the operational costs associated with subscription management.

Additionally, blockchain's transparency ensures that all transactions are recorded on a public ledger, increasing trust among subscribers by providing a transparent and immutable record of all interactions. This transparency also aids in combating fraud and ensuring compliance with regulatory requirements.

Blockchain can also help address issues like password sharing by enabling more sophisticated identity verification and access management solutions.

Lastly, blockchain's immutable records and transparent processes help ensure compliance with regulatory requirements, such as data protection laws, by providing clear audit trails.

Overall, blockchain's ability to provide a secure, efficient, and transparent framework makes it highly suitable for improving the operations of subscription-based services, ultimately leading to enhanced customer satisfaction and operational efficiency.

What is our approach and what are we addressing?

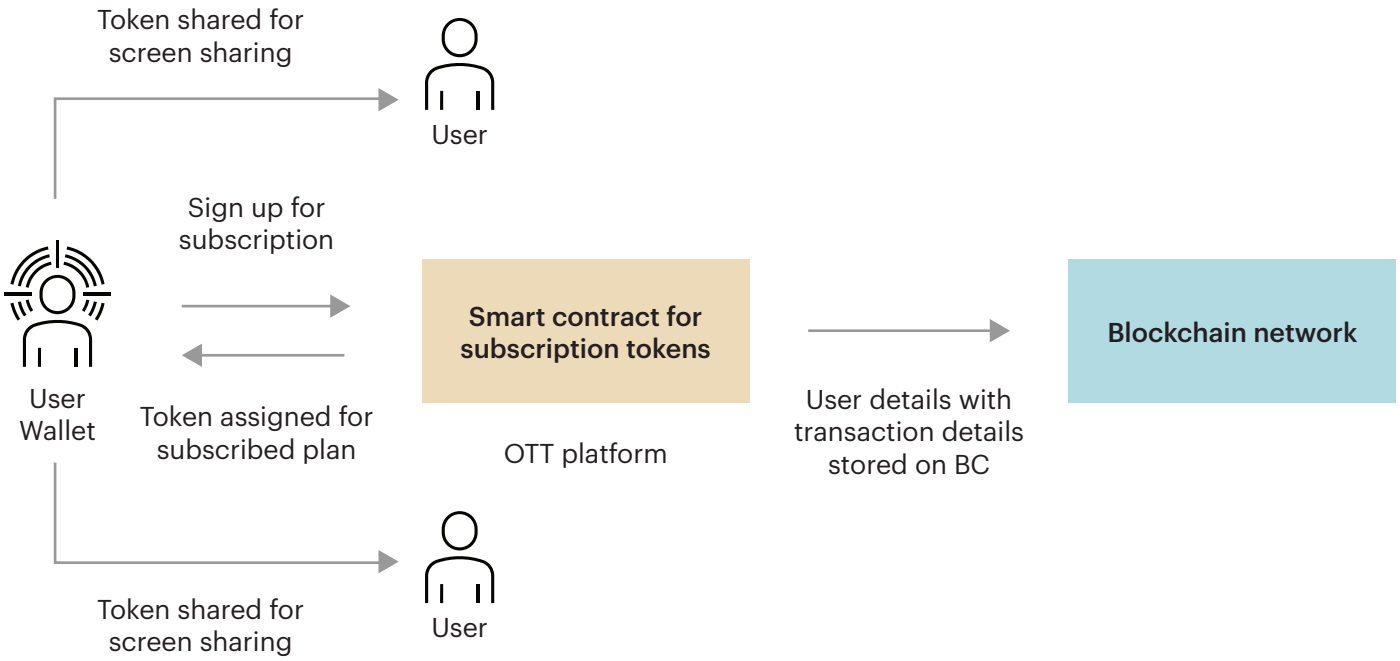


Figure 1: Blockchain managed OTT access

The above figure explains how our proposed approach can be used in OTT access. Firstly, the user subscribes (hence referred to as subscriber) through a relevant subscription model by paying a fee, which converts into tokens stored in their SSI (self-sovereign identity) wallet.

In our proposed approach, tokens are deducted from their SSI wallet if the subscriber shares their password with others. The more the password is shared, the more tokens are reduced. This will result in the subscription period ending sooner than promised, requiring the user to repurchase the subscription earlier.

This model manages payment, password sharing, and subscription tokens via smart contracts on the blockchain network, providing secure and transparent access to the OTT platform.

The user can see the token addition/deduction in their account and know the subscription ending date based on the same.

Further, the key features of such a model are:

- **Automated workflows:** Renewals, tiered pricing adjustments, and loyalty rewards can all be triggered autonomously, reducing errors and administrative burdens.
- **Overhead reduction:** Bypassing intermediaries in payment processing and other subscription functions can translate to significant cost savings.
- **Resource optimization:** Redeploy staff from mundane subscription management to focus on strategic business development and customer engagement.

Key challenges and solutions

The development of a blockchain-based subscription model can face several challenges:

- **Implementation complexity in balancing user experience and security:** Striking the right balance between a user-friendly interface and the inherent complexity of blockchain technology can be challenging. However, a robust system design and intuitive interface that prioritizes user experience without compromising blockchain's security features can achieve this balance.
- **Establishing a revenue model:** Determining a blockchain-based subscription model's most effective pricing strategy requires careful consideration. While a SaaS model with usage-based pricing, including licensing, customization, and ongoing support fees, offers a viable option, it's important to explore different pricing structures to find the best fit for the target market. For example, with a subscription rate of 0.25 to 0.5 percent, an OTT platform with one million subscribers could generate $10 million annually.
- **Market differentiation:** The subscription management landscape is becoming increasingly competitive. Highlighting innovative features like blockchain integration, token-based models, and other unique value propositions will be essential for attracting subscription platforms and differentiating your solution.

Key benefits

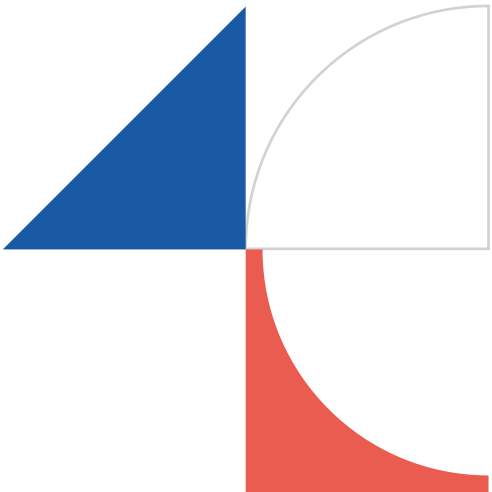
This innovative model offers significant advantages for users and businesses[2]:

Enhanced trust and security for users:

- **Dispute reduction:** Immutable records on the blockchain eliminate ambiguity in subscription terms, payment history, and service agreements. This transparency fosters smoother customer interactions and reduces potential conflicts.
- **Anti-fraud measures:** Blockchain's tamper-proof nature significantly hinders subscription fraud. Secure transactions protect businesses' revenue streams and minimize chargebacks associated with fraudulent activity.
- **Brand equity boost:** Transparency is crucial in the subscription market. Blockchain's inherent transparency builds stronger customer loyalty and attracts new subscribers seeking a trustworthy platform.

Business advantages:

- **Revenue generation:** This solution creates a new revenue stream catering to subscription-based platforms. Offered as a SaaS model with usage-based pricing, it can include:
  - **Licensing fees:** A one-time fee for accessing the core blockchain-based subscription platform.
  - **Customization charges:** Tailoring the solution to specific platform needs can generate additional revenue.
  - **Ongoing support:** Providing ongoing maintenance and support ensures platform stability and client satisfaction, creating a recurring revenue stream.
- **Market differentiation:** Innovative features like blockchain integration, token-based models, and "one-roof" policies significantly differentiate your solution. This unique value proposition attracts platforms seeking a competitive edge.
- **Long-term partnerships:** By consistently delivering a solution that addresses evolving needs, you can build long-term partnerships with subscription platforms, fostering a loyal customer base and recurring revenue.
- **Increased expertise:** Developing and implementing this solution strengthens your company's expertise in blockchain technology. This expertise can be leveraged for future projects and positions you as a thought leader in the technology space.



How can the subscription model be customized?

Here are some use cases where subscription models can be customized:

- **Increased user loyalty with token incentives:** The platform leverages tokens stored in a user's blockchain wallet to incentivize them to stay within the ecosystem. This can be achieved through rewards or discounts tied to token usage, encouraging long-term subscriptions and fostering stronger user loyalty.
- **Combating password sharing:** By operating under a single sign-on system within the blockchain ecosystem, unauthorized credential sharing is discouraged. This ensures a secure and personalized experience for each user, with their subscription tied directly to their account. Additional login attempts outside the platform might require verification to prevent misuse.
- **Flexible subscription options:** The model caters to diverse user needs by offering a token transfer system. Users requiring access for a limited time can transfer a proportional token amount to existing subscribers instead of committing to a full month. Alternatively, the platform can offer mini-subscriptions or weekend subscription options, allowing users to pay for access only for the needed duration. This enhances flexibility and user-friendliness, attracting a wider audience with varying subscription preferences.
- **Enhanced security with blockchain integration:** By integrating blockchain technology, the platform significantly boosts the security of user transactions and interactions. The decentralized nature of blockchain makes data tampering and unauthorized access extremely difficult, ensuring a secure and trustworthy environment for users and the platform.

Conclusion

In today's competitive landscape, building enduring customer loyalty is paramount. Subscription models offer recurring revenue and valuable customer insights, unlike traditional methods hampered by hidden costs, inflexibility, and security vulnerabilities. Blockchain technology presents a solution, empowering businesses to reshape subscriptions for a strategic advantage. By leveraging blockchain's security, transparency, and efficiency, businesses can cultivate stronger customer relationships and unlock sustainable growth through a dynamic, secure subscription experience.

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