Intellectual Property and Patent Assets on Casper

CasperLabs and patent technology innovator IPwe partner to improve the patent registration process and create a new approach to patent ownership verification.

Scope

CasperLabs and IPwe have partnered to build a chain of custody (CoC) solution for public patent records. The "CoC Solution" will use the Casper public blockchain to store, secure, and trace patent data. The result is a paradigm shift in the application and role of patents in finance, technology, and enterprise. Intellectual Property (IP) is the largest and often most critical asset on corporate balance sheets. CTOs and CFOs today are taking a greater interest in how IP is tracked, managed and deployed. A first step in the evolution of an improved understanding and management of this critical asset is a reliable CoC solution.

Casper

CasperLabs is a blockchain development studio building the Casper network ("Casper"). Casper is the first provably live, scalable, and permissionless Proof of Stake blockchain built off the correct-by-construction consensus model. Casper is a future proof blockchain, designed to remain performant, scalable, secure, decentralized, and adaptable as the Web3 ecosystem evolves to developer, business, and consumer needs. Contact Casper at **hello@casperlabs.io**

IPwe

IPwe has built the world's first global patent market, connecting the world's patent ecosystem on a single platform. The IPwe Platform enables traditional patent transactions (licenses, sales, and acquisitions) and empowers new classes of transactions like reporting, financing, and insurance. IPwe leverages artificial intelligence, data mining, predictive analytics, and now blockchain technology to create entirely new ways of interacting and transacting with patents, and improving understanding of this asset class.

Opportunity

Historically, CFOs and CTOs have had limited involvement in the business and financial management of intellectual property, placing the asset as obscure entities that are difficult to track. As a result, critical data including ownership records were not kept up to date, with error rates of IP data exceeding 30%. At a time when the benefits of cooperation, transparency and technological adoption are well understood as a true competitive advantage by many C-suite executives, management of the IP asset class has not kept up.

The technology now exists to change how IP is managed. Casper and IPwe will deploy a CoC solution, enabling government entities and some of the largest enterprises in the world to better manage and utilize their IP. As with any asset class, the primary objectives will be met through increased transparency and understanding, and fulfilled through offering solutions that improve financial returns and lower costs.

As obvious as it might seem to many executives, it is difficult to capture the benefits of an asset without a high level of confidence in critical data surrounding the asset. Intellectual property has underperformed because of this.

Solution

The CoC Solution will be developed in two phases.

Phase 1 — which is in production — will demonstrate the ability of Casper to provide secure, cryptographic access to critical data about patents. Phase 1 will establish the interoperability of the Casper blockchain with Hyperledger. IPwe currently uses Hyperledger to support data availability within its patent registry. Phase 1 of CoC will enable the primary data to remain on Hyperledger with selective, high-value information migrated and maintained on the Casper public blockchain. Casper's solution enables that patent data to be encrypted (all data is encrypted by default, but authors can choose to exclude certain fields from encryption so that it is open for public view), with decryption available only to the parties holding the encryption keys. In the case of patents, those parties are likely to be the patent holders themselves, any entities licensed to use the patent, and selective regulatory agencies if necessary.
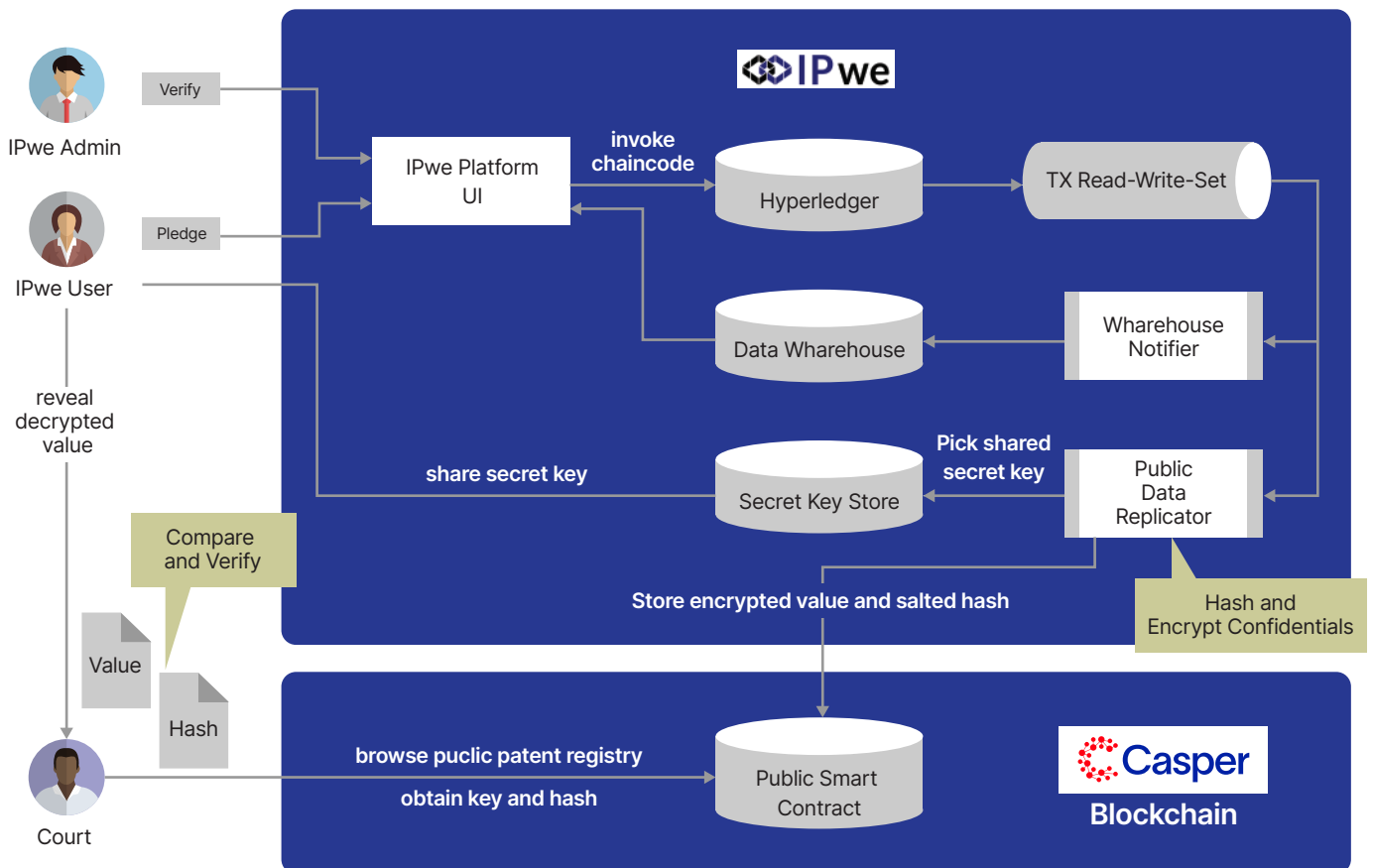
Phase 2 will implement a more robust integration with IPwe's infrastructure to create a Global Patent Registry (GPR) with the Casper blockchain to support a consortium of Patent Owners, National Patent Offices, and Verifiers such as IPwe. GPR will bring the current process of granting, publishing, owning, transferring, and pledging patents onto the Casper blockchain, using smart contracts to manage these processes. GPR will enable strong provenance capabilities, allowing for patents to be clearly traced as they are created, maintained, licensed, and transferred. The result will be a more efficient, complete, equitable, globally compliant, and revenue-generating patent ecosystem that supports patent owners, licensers, granting authorities, and verifiers.

Blockchain for Intellectual Property

Intellectual property is a vast umbrella of complex, intangible assets. IP is crucial to protect and uphold, but also difficult to do so by virtue of it being intangible. Verification of the most basic information such as origin, existence, ownership, and chain of title are neither reliable nor readily available.

A solution to increase transparency and ease of establishing and evaluating these most fundamental facts about IP – including **Title, Provenance, and Transactional Efficiency** - is needed to increase value capture and utilization of the IP asset class.

Title: Owners of IP and their transaction partners need to remain confident that title is properly recorded and known. Core to this goal is the assurance that access to IP can be granted, reviewed, and revoked by its primary owner or guardian at any time. More difficult is the reality that only portions of one's IP may be best suited for public exposure, with the most sensitive elements needing to be restricted. The complexity in permissioning is simply not supported by existing technology. Blockchain technology can ensure that IP records are neither manipulated nor deleted, while providing the flexibility for certain permitted parties to have selective access of on-chain data.

Provenance: Intellectual property can change hands frequently and for many different reasons. IP can be voluntarily transferred to other individuals or entities through an agreement, temporarily or indefinitely licensed to outside parties, forcibly transferred to another party due to legal action, or dissolved as a piece of defined IP due to legal review. Encumbrances are created as a result of lending transactions and other corporate transactions. At its worst, these transfers and actions create a complex, disparate, and unorganized record of provenance that is difficult to store, frustrating to maintain, and operationally expensive to review, verify, and update. Blockchain technology's public and transparent nature ensures everyone can see the record of data entries. Decentralization ensures there is no central source of manipulation, so provenance on a blockchain network can be verified and assured by any individual.

Transactional Efficiency: Intellectual property can be difficult to monetize, particularly because of the difficulty of identifying the chain of ownership and provenance noted above, but also because of the costs these inefficiencies create. For patents in particular, patent owners lose out on an estimated estimated $1 trillion of potential revenue in the US alone each year in missed partnerships. A transparent and reliable means to verify these attributes are the first required step in improving management and returns on this critical asset.

Casper for Intellectual Property

The Casper blockchain is uniquely tailored to solving the types of problems currently faced by the intellectual property ecosystem, especially with regards to patent management.

Security: Casper enables network users to selectively grant and revoke permission to some or all data stored on the blockchain. IP owners can ensure that only specific parties have access to certain data and can revoke some or all of that access in more efficient ways than currently available. Access may be revoked manually due to an agreement or breach of contract or may be programmed via a smart contract to terminate automatically with the terms of a subscription.

Provenance: Casper establishes a clear chain of records through cryptographic hashes that are stored on the network. For private networks, secure and private records can be compiled and "sent" to the public blockchain, ensuring the data can be irrefutably verified but no information is revealed.

Transactional Efficiency: With robust support of data provenance and the ability to encode payments through smart contracts, Casper enables these systems to confidently ensure payments are distributed fairly to patent and IP beneficiaries while reducing the associated cost and difficulty.

Contact Casper at **hello@casperlabs.io**