

Global Patent Prosecution

November 2018



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Technology Spotlight Patenting Blockchain Technology

Blockchain is a booming technology, causing a dramatic increase in patent filings at the U.S Patent and Trademark Office. The November 2018 issue of Sterne Kessler's Global Patent Prosecution Newsletter provides an overview of blockchain technology and patent application considerations when prosecuting blockchain-related applications before the U.S.P.T.O.

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Co-Editor:



Paul A. Calvo, Ph.D.

Director

pcalvo@sternekessler.com

Co-Editor:



Christian A. Camarce

Director

ccamarce@sternekessler.com

Author:



George L. Howarah

Associate

ghowarah@sternekessler.com

BLOCKCHAIN TO THE FUTURE

By [George L. Howarah](#)

You may have heard the term “blockchain” associated with cryptocurrencies. However, many people do not realize that blockchain has far reaching implications on a wide variety of businesses and industries. In this article, we discuss how blockchain works and potential applications for blockchain.

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BLOCKCHAIN-ING ALICE

By [George L. Howarah](#)

Over the past few years, a dramatic number of blockchain-related patent applications have been filed at the U.S. Patent & Trademark Office (USPTO). Blockchain innovations may be categorized as software-use cases and thus may receive resistance by the USPTO as being directed to patent ineligible subject matter under 35 U.S.C. § 101 in view of the Supreme Court’s decision in *Alice v. CLS Bank Int’l.*^[1]

^[1] 134 S. Ct. 2347 (2014).

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You may have heard the term “blockchain” associated with cryptocurrencies. However, many people do not realize that blockchain has far reaching implications on a wide variety of businesses and industries. In this article, we discuss how blockchain works and potential applications for blockchain.

I. How Blockchain Works

A. Overview

Blockchain is a technology that allows data to be securely transferred using a decentralized and digital ledger that tracks and records a growing list of entries, called blocks. The list of entries are linked using cryptography. Thus, the ledger is not stored in a central entity (e.g., server); rather, it is distributed and stored via a network of private computers (“nodes”).

B. Blockchain Types

The main blockchain types are public and private. Public blockchains act as an open network and allow anyone to participate in the network. The participants can add to the blockchain, but cannot modify existing blocks. Once the blockchain is updated, the digital ledger is shared and transparently run by all participants.

Private blockchains act in a similar fashion as public blockchains. However, private blockchains are typically controlled by one or more entities. As such, private blockchains require an invitation or permission to join the network and

must be validated by either a starter or a set of rules. As a result, each participant's identity may be known by the entity controlling the private blockchain. Yet, unlike public blockchains, private blockchain participants may only be able to read certain data.

C. Blocks

A blockchain starts with an original block having a hash value, i.e. a numeric value of a fixed length. Every block thereafter has a hash pointer (i.e., a pointer to where data is stored in a previous block together with a cryptographic hash of the data) and data to be stored in the block (e.g., if cryptocurrency, data is currency ledger details). As such, a user may not alter data of a particular block without changing the hash value of all subsequent blocks in the chain. In doing so, each subsequent block will be invalidated, since their hash value is based on the previous block's hash value. Thus, the longer the blockchain, the more reliable and secure it becomes, since altering a block requires modification to each subsequent block in the chain.

D. Blockchain Implementation

A blockchain implementation typically begins with a user submitting a transaction request. A block representing the transaction is created and broadcasted to the appropriate nodes in the network (e.g., in a public block chain, the broadcast is to all nodes in the network). The nodes then validate the block and the transaction to verify it has not been tampered with. The block is then added to the chain and the transaction becomes verified and executed.

II. Potential Applications

Blockchain technology can be utilized for a wide array of applications. For example, "smart contracts" – an agreement between parties written into lines of code and stored in a blockchain – permit users to exchange anything of value in a transparent, conflict-free manner while avoiding a middleman. Smart contracts can be used for the transfer of real estate, placing wagers, transferring goods, etc. Additionally, blockchain technology can be employed to secure an individual's digital identity in an irrefutable, immutable, and secure manner.

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In *Alice*, the Supreme Court established a two-step test to determine whether claims are patent eligible. In the first step, the Court determines whether the patent claim includes a law of nature, natural phenomenon, or abstract idea.^[2] If the patent claim does not fit into one of these categories, it includes patentable subject matter. However, if the patent claim does fit into one of these categories, the second step of the test inquires whether the patent claim includes an “inventive concept sufficient to transform the nature of the claim into a patent-eligible application.”^[3]

Step 1

Under the first step, the manner in which the patent claim is characterized determines whether the claim is considered an abstract idea. With regard to blockchain-related patent claims, the USPTO will likely consider one of two lines of cases to make this determination.

Under the first line of cases, the Supreme Court and Federal Circuit have held that the use of a computer to implement a fundamental economic or conventional business practice does not, by itself, render claims patent ineligible.^{[4],[5]} Under the second line of cases, the Federal Circuit has held that claims directed to solutions rooted in computer technology to overcome a problem arising in the realm of computer networks, or to an improvement to the functionality of a computer itself, are not directed to an abstract idea.^{[6],[7]}

The USPTO has provided guidance based on the reasoning provided in the second line of cases. Like the Federal Circuit, the USPTO appears to focus its analysis on the claimed invention's technical advantages to determine whether the claimed concept provides an advantage over the prior art.

Accordingly, when preparing blockchain-related applications, applicants should first identify the novel concepts of the patent application. And, when drafting the patent specification, applicants should clearly explain technical advantages provided by the novel concepts. Though the technical advantages may be similar to what others sought to accomplish, the novel concepts may be directed to a different technique to solve a different problem.

Some blockchain-related applications may not pass the first step of the *Alice* test and be considered an abstract idea. In these instances, the analysis moves to second step of the *Alice* test.

Step 2

Under the second step of the *Alice* test, the claim elements at issue are considered, individually and in combination, to determine whether they have an inventive concept that amounts to significantly more than a judicial exception (e.g., abstract idea) itself.^[8] In *Alice*, the Supreme Court held that an “inventive concept” is determined by an element or combination of elements recited in the claim that is beyond the judicial exception and is sufficient to ensure the claim as a whole amounts to significantly more than the judicial exception itself.^[9]

Therefore, when drafting claims for blockchain-related applications, applicants should be cognizant of the application's novel concepts. For example, applicants should intertwine the novel concepts into one or more claim limitations. Applicants should further consider, if possible, arranging claim limitations in a particular—or novel—order such that the particular arrangement is distinguishable over the prior art. Again, it is important for applicants to clearly explain how the novel concepts provide technical advantages over the prior art in the patent specification.

[1] 134 S. Ct. 2347 (2014).

[2] *Id.* at 2355

[3] *Id.*

[4] *Id.* at 2357-2358.

[5] *See Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709 (Fed. Cir. 2014).

[6] *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016).

[7] *See McRO Inc. v. Bandai Namco Games America*, 837 F.3d 1299 (Fed. Cir. 2016).

[8] *Alice Corp.*, 134 S. Ct. at 2355

[9] *Id.*

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