Patenting Blockchain Inventions Checklist

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A Checklist for evaluating and patenting blockchain-related inventions, including steps for conducting an invention disclosure meeting to determine Section 101 patent eligibility, and responding to US Patent and Trademark Office (USPTO) patent eligibility claim rejections, including the technical features and improvements typically required to overcome these rejections.

This Checklist is designed for use with Practice Notes:

- Invention Disclosure Meetings: Software Inventions.
- Patent Prosecution: USPTO Section 101 Patent Eligibility Rejections (Computer-Implemented Technologies).
- Blockchain and Distributed Ledger Technology (DLT): Overview.

Identify and Capture the Invention's Technological Improvements

Blockchain patents are similar to those on other software and computer-related inventions and must be eligible for patent protection under Section 101. Counsel should:

- Conduct an invention disclosure meeting and ensure the inventors:
  - describe the invention in its full scope; and
  - provide sufficient technical details, including improvements to blockchain technology.

  For information generally on invention disclosure meetings, see Practice Note, Invention Disclosure Meetings: Software Inventions.
- Draft the claims, specification, and drawings with sufficient disclosure to withstand a Section 101 patent eligibility rejection. For information on drafting patent applications, see Practice Notes:
  - Patent Drafting: The Specification;
  - Patent Drafting: High-Technology and Life Science Invention Specifications;

- Patent Drafting: Claiming for Proper Interpretation in Computer-Implemented Inventions; and
- Patent Prosecution: Preparing Drawings in Patent Applications.

Initially, identify improvements to:

- **Blockchain** technology itself, including what aspects of blockchain technology are improved and how.
- Another technology using blockchain. Counsel should consider:
  - how the invention improves the other technology; and
  - whether blockchain technology's application in the other technology changes how the existing blockchain technology operates. If the operation is changed, counsel should identify the new features, such as data validation and mining, APIs, nodes, network communication, and consensus mechanisms (a process by which nodes in a blockchain network agree on transaction validity) that changes the existing blockchain technology.
- A business practice using blockchain, focusing on whether any unique technical aspect of the invention improves a technology rather than merely improving the business practice.

  For general information on improvements to technology, see Practice Notes, Patent Drafting: High-Technology and Life Science Invention Specifications: Improvements to Computing Device and Patent Prosecution: USPTO Section 101 Patent Eligibility Rejections (Computer-Implemented Technologies): Improving Computer or Technology.

For information on navigating patent eligibility issues under 35 U.S.C. § 101, see Section 101 Patent Eligibility Toolkit.

Blockchain Technical Features

Gather technical details about the invention to describe a practical application or solution that solves a technical problem, including whether the invention:

- Uses well-known trustless and immutable characteristics of blockchain technology. If so, determine how the invention:
  - uses the existing blockchain technology; and
  - is different from how existing technologies integrate with blockchain.
- Uniquely validates blockchain nodes in a network and:
  - what makes the validation process unique; and
  - which entities in the network validate.

(For information on validation, see Practice Note, Blockchain and Distributed Ledger Technology (DLT): Overview: Blockchain Basics.)

- Describe the transactions in a distributed ledger (a database spread across a network of computers and updated in a synchronized manner), including:
  - what makes the descriptions unique; and
  - how the descriptions are different from existing descriptions of transactions.

  (For information on distributed ledger systems, see Practice Note, Blockchain and Distributed Ledger Technology (DLT): Overview: Overview of Distributed Ledger Systems.)

- Uniquely uses consensus rules for including a transaction in the ledger and how the rules apply differently than existing use cases (see Practice Note, Blockchain and Distributed Ledger Technology (DLT): Overview: Blockchain Consensus Mechanisms).
- Uses types of data in various layers of the chain or the consensus algorithm in a unique manner.
- Uniquely distributes decentralized features across different network nodes and operates the same on public/permissionless and private/permissioned blockchains (see Practice Note, Blockchain and Distributed Ledger Technology (DLT): Overview: Public/Private and Permissionless/Permissioned Blockchains).
- Creates new infrastructure.
- Establishes new layers of security (see Practice Note, Blockchain and Distributed Ledger Technology (DLT): Overview: Blockchain Security Measures).

For information on gathering technical features, see Practice Note, Invention Disclosure Meetings: Software Inventions: Technical Invention Description.

Problems Solved by the Invention

Determine how the invention solves practical problems, such as:

- Infrastructure. Counsel should identify:
  - how the consensus algorithm is improved; and
  - whether the invention segments parts of the transactions into different layers to improve the blockchain infrastructure.

- Security, including whether the invention:

    - improves the security of transactions or the network or prevents fraud due to the decentralized nature of the invention; and
    - provides complex and sufficiently sized digital signatures that cannot be performed by a human mind or verified using a public key and overly complex signature algorithms (see *Ex parte Davis*, 2020 WL 5039332, *7-8 (Patent Tr. & App. Bd. (2020))).

- Speed or processes for on-chain storage, including how the invention:
    - increases transactions speed; and
    - reduces the size of transactions, volume, or transaction frequency.

- Privacy, including how cryptographic methods are improved for privacy using blockchains (see the USPTO's Subject Matter Eligibility Examples: Abstract Ideas (Example 41)).

For information generally on improvements to technology, see Practice Note, USPTO Section 101 Subject Matter Eligibility Rejections: Legal Standards and Examination Guidance for Computer-Implemented Inventions: Improved Computer Functionality.

Improvements to Technology in Another Technical Field

- Determine whether the invention improves other technical fields, including improvements to:
    - the linkage with off-chain protocols, processes, or assets;
    - the creation of immutable data that cannot be modified without the invention;
    - the transparency and security of tracking the movement of goods and services across a supply chain;
    - the security data storage and sharing;
    - the confirmation or authentication of a user's digital identity; and
    - the safety or privacy of payment processing systems and networks.

(MPEP §§ 2106.04(d)(1) and 2106.05(a); see Practice Note, Patent Prosecution: USPTO Section 101 Patent Eligibility Rejections (Computer-Implemented Technologies): Step 2A - Prong 2 (Practical Application).)

Respond to Section 101 Patent Eligibility Rejections

This section is designed for use with Practice Notes, Patent Drafting: Claiming for Proper Interpretation in Computer-Implemented Inventions and Patent Prosecution: USPTO Section 101 Patent Eligibility Rejections (Computer-Implemented Technologies).

Arguments in Favor of Patent Eligibility

In addition to standard office action response practices (see Practice Notes, USPTO Patent Office Action Responses and Patent Prosecution: USPTO Section 101 Patent Eligibility Rejections (Computer-Implemented Technologies)), counsel responding to a Section 101 patent eligibility claim rejection in a pending application should consider arguing:

- That the claims are directed to an improvement in blockchain technology itself, for example:
    - reducing transaction size, frequency, or storage cost;
    - boosting transaction processing speeds by using, for example, a faster consensus algorithm or layer two scaling solution;
    - segmenting transaction components into different layers to increase the processing speed of the network or improve the security of the network;
    - enhancing network security, for example, using more robust security protocols or further decentralizing the network to prevent any single point of failure;
    - interoperability among different blockchain networks, allowing for the exchange of assets across different networks; and
    - improving blockchain's scalability by, for example, implementing off-chain solutions to increase the number of transactions.

  For information on technology improvements as a basis for patent eligibility, see Practice Notes, Patent Prosecution: USPTO Section 101 Patent Eligibility Rejections (Computer-Implemented Technologies): Arguing Eligibility Under Step 2A and Improving Computer or Technology and Patent Drafting: High-Technology and Life Science Invention Specifications: Improvements to Computing Device.

- Arguing that the claimed invention improves a technical field other than blockchain (MPEP §§ 2106.04(d)(1) and 2106.05(a)).

- That the specification describes a specific way of improving blockchain technology that is tied to the claimed invention. For information on drafting a patent application with sufficient specificity, see Practice Note, Patent Drafting: High-Technology and Life Science Invention Specifications: Computer-Implemented Inventions.

- Where the rejection relies on a citation to a publication to conclude that the claimed blockchain features were well-understood, routine, and conventional:

- the USPTO's *Berkheimer* memorandum (April 19, 2018, USPTO Memorandum - Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*)); and

- arguing the publication is inadequate to prove the blockchain feature is widely prevalent or in common use in the relevant industry (MPEP § 2106.05(d); see Practice Note, Patent Prosecution: USPTO Section 101 Patent Eligibility Rejections (Computer-Implemented Technologies): Well-Understood, Routine, and Conventional.)

