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Blockchain Technology: Drafting Effective Patent Claims

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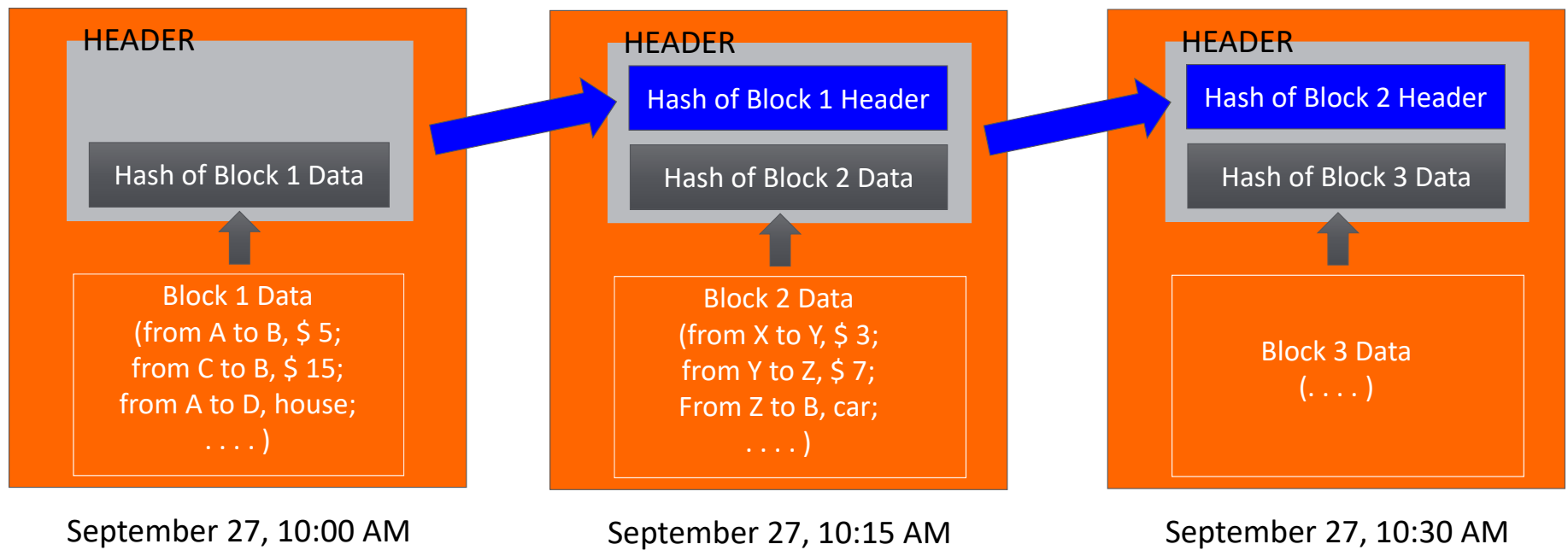# Blockchain Overview

- Blockchain Resolves Traditional Recordkeeping Issues
  - Old Technology: Centralized Authority for Records Creates a Single Point of Failure
    - ❑ Susceptible to hackers
    - ❑ Susceptible to hardware failure
    - ❑ Increased transaction costs due to middlemen and hardware/financial limitations

  - Blockchain: Distributed Ledger
    - ❑ Decentralization prevents hackers from compromising the entire system at one node
    - ❑ Decentralized hardware prevents collapse due to a single point of failure
    - ❑ Peer-to-peer nature of the transactions eliminates middlemen and reduces costs

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Blockchain: Basics of How it Works

- Transactions in Blocks
- Blocks Linked by Hash

HEADER

Hash of Block 1 Data

Block 1 Data
(from A to B, $ 5;
from C to B, $ 15;
from A to D, house;
. . . .)

September 27, 10:00 AM

HEADER

Hash of Block 1 Header

Hash of Block 2 Data

Block 2 Data
(from X to Y, $ 3;
from Y to Z, $ 7;
From Z to B, car;
. . . .)

September 27, 10:15 AM

HEADER

Hash of Block 2 Header

Hash of Block 3 Data

Block 3 Data
(. . . .)

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Blockchain Overview

- Decentralized, distributed database technology

- Multiple actors

    ➤ Managing Entity (Ethereum, Bitcoin, etc.)

    ➤ Nodes (Users & Miners)

- Applications

    ➤ Supply chain management

    ➤ Licensing chains / deeds

    ➤ Smart contracts / financial transactions

    ➤ Cryptocurrency

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Divided Infringement

1. A method to record transactions on a distributed network comprising,

submitting one or more proposed transaction to the distributed network (user);
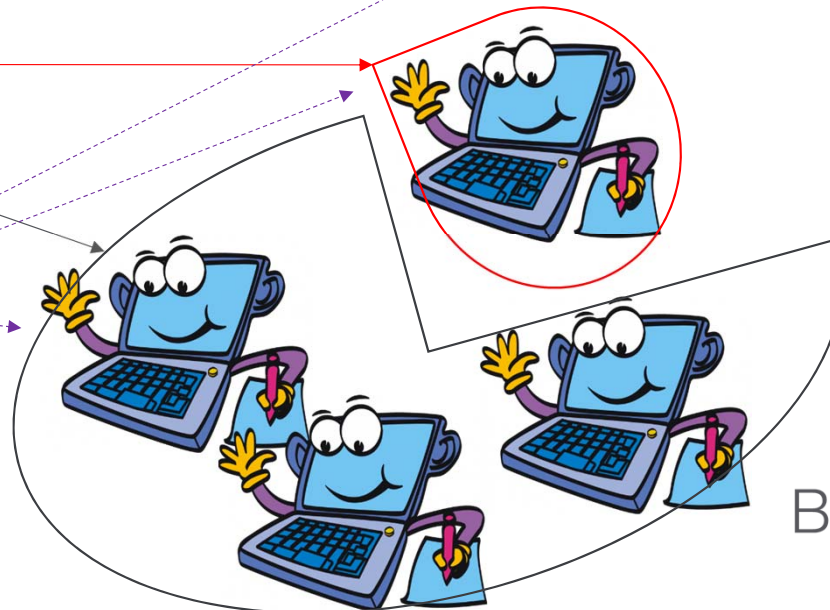
providing a cryptographic algorithm to hash the submitted transactions (managing entity);

cryptographically hashing the submitted transactions based on the provided algorithm (miner);

verifying the hashed transactions (other miners); and

recording the verified transaction in one or more databases (miners/managing entity).

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Akamai Tech. Inc. v. Limelight Networks, Inc., 797 F.3d 1020 (Fed. Cir. 2015) (en banc)

(1) an entity **directs or controls** others' performance: an alleged infringer
- conditions participation in an activity or receipt of a benefit upon performance of a step or steps of a patented method; and
- establishes the manner or timing of that performance.

(2) actors form a **joint enterprise**, requires proof of:
- an agreement, express or implied, among the members of the group;
- a common purpose to be carried out by the group;
- a community of pecuniary interest in that purpose, among the members; and
- an equal right to a voice in the direction of the enterprise, which gives an equal right of control.

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Extraterritorial Activity

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recording the verified transaction in one or more databases (miners/managing entity).

"We therefore hold that a process cannot be used 'within' the United States as required by section 271(a) **unless each of the steps is performed within this country**." *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1318 (Fed. Cir. 2005)

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Extraterritorial Activity

1. A system to record transactions on a distributed network comprising,

a distributed network to which a proposed transaction is submitted;

a first device for cryptographically hashing the submitted transactions based on a cryptographic algorithm; and

a second device for verifying the hashed transaction; and

a database for recording the verified transaction.

"The use of a claimed system under section 271(a) is the place at which the system as a whole is put into service, *i.e.,* the place where **control of the system is exercised** and **beneficial use of the system obtained**." *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1317 (Fed. Cir. 2005)

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Drafting a Blockchain Claim – Best Practices

- ## System Claims
  - ➢ Every element should be directed to a single actor's activities
    - ❏ Managing Entity (*i.e.* all elements directed to a single server)
    - ❏ Node (*i.e.* all elements directed to the activities of a user/miner)
  - ➢ Control of the system and the benefits derived from it should be in the United States

- ## Method Claims
  - ➢ Each step should be controlled or directed by a single actor
    - ❏ Conditional Participation or Receipt of a Benefit upon Step Performance
    - ❏ Control over Manner and Timing of a Step
  - ➢ Each step must be performed in the United States

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Blockchain Technology and Patents

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