TIVITY - Patent Hub

Team and Roles

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Technology and Development

Team leader

Design

Business service engineering

Blockchain Use Case

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WHY

- Companies and innovators are facing **risks** from
    - Hackers, Competitors, Employees, Partners & Trolls
- In the new era of **co-creation** (e.g. open-innovation) the prove of **ownership** is gaining more relevance than ever

2

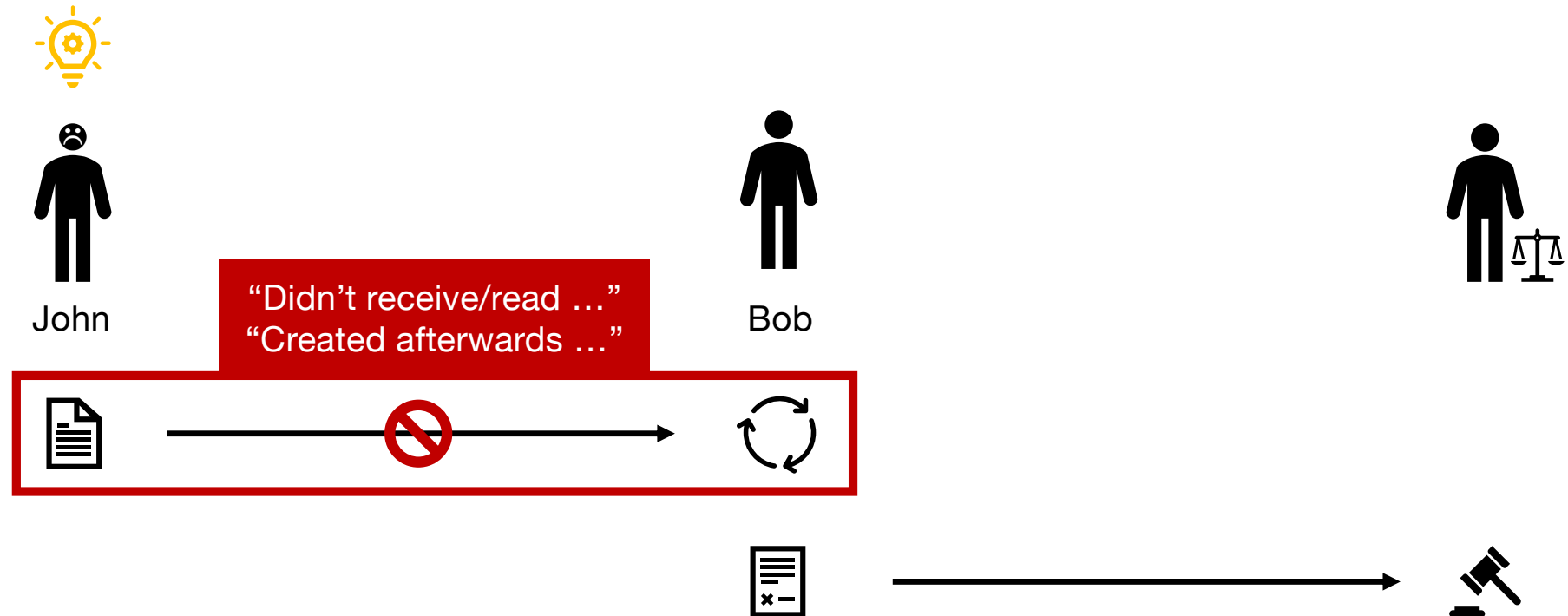### HOW

As a user, I want to...
- **Register** assets on the blockchain, regardless of format or size, by selecting them and starting a workflow
- Generate a **certificate** to prove ownership, existence & integrity
- The versions handled and **store** the assets additionally on **IPFS**
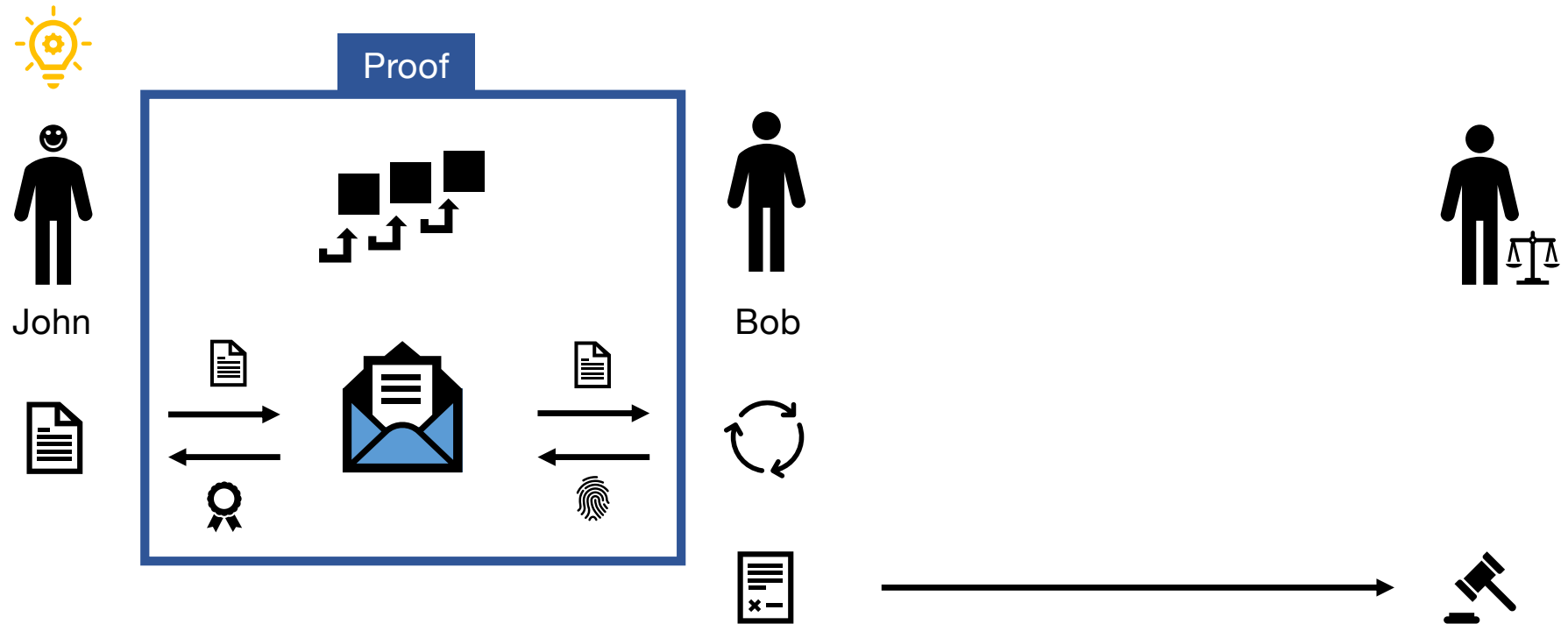
3

WHAT

- Creating a hash on the files in a blockchain transaction
- Encrypting files and metadata
- Upload to IPFS
- API driven solution
- Service oriented design
- Extensible
- Technology stack & blockchain is free to choose

Blockchain Use Case – Example

John

"Didn't receive/read …"
"Created afterwards …"

Bob

Blockchain Use Case – Example

Blockchain Use Case

① WHY

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② HOW

As a user, I want to...
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- Generate a certificate to prove ownership, existence & integrity
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③ WHAT

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- API driven solution
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Blockchain Use Case – Desired API

As a user, I want to...
- **Register** assets on the blockchain, regardless of format or size, by **selecting items** and starting a workflow in a TIVITY-App
  - **Generate** and **attach** certificate to prove ownership, existence & integrity
  - Certificate shows all linked and registered information (Merkle Tree)
- **Update** the certificate in case of updated or added assets
  - The versions handled and certificate/hashes are **updated**
- **Store** assets on the blockchain
  - **Store** the assets additionally on **IPFS**
- **List** all certifications and the attached informations
  - List, search and filter **my** or the certifications of the **workspace/company**
- **Verification**
  - A confirmed delivery (verified sharing)

Solution approach – How about a public Blockchain?

John

Eve

Bob
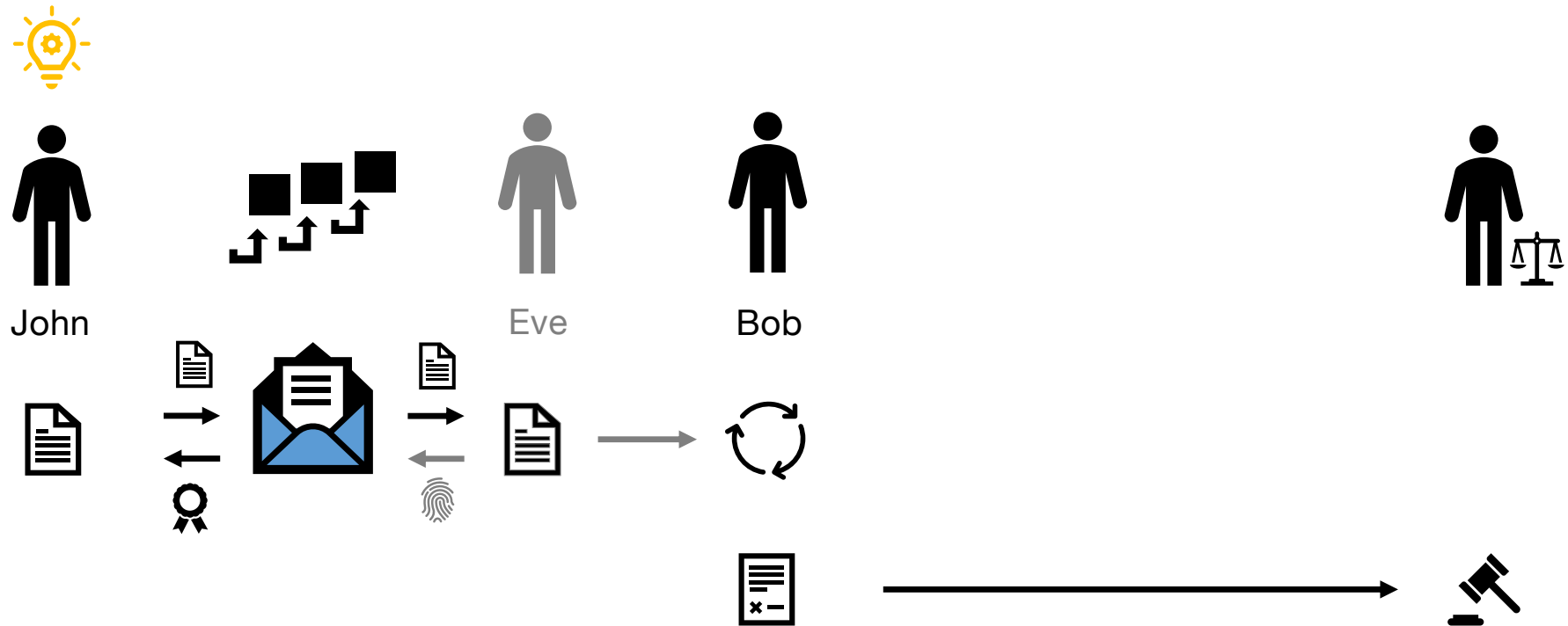
→ Private permissioned Blockchain with an identity authority
→ One-Time Envelopes

Solution approach – Technology Stack

Blockchain technology: Hyperledger

Envelope mechanism: Encryption, File Hashes, Chain Code

Decentralized Data storage: IPFS or BigChainDB

Next steps

1. Design an API
2. Decide whether IPFS or BigChainDB is suited better
3. Design an architecture combining Hyperledger Blockchain and IPFS/BigChainDB
4. Design the envelope mechanism
5. Setup a Hyperledger Blockchain using Hyperledger Fabric
6. Implement the desired API and the envelope mechanism
7. Implement a test frontend