Initial Coin Offering: An Accounting Information Systems Teaching Case

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Learning Objectives

1. Blockchain fundamentals.

2. Auditing problem in the online marketing industry.

3. Proposed auditing solutions using blockchain and their current challenges.

4. **Introducing N+1 Accounting Entry Systems.**

5. ICO common structures and different types of tokens.

6. Teaching Case efficacy results

LO1 - Fundamentals

- ICO
- Hash
- Block
- Miners
- Blockchain
- Distributed Blockchain
- Digital Wallet
- Token Creation
- Auditing Transactions

Fundamentals

- https://anders.com/blockchain/
- https://metamask.io/
- http://tokenfactory.surge.sh/
- https://ropsten.etherscan.io

Fundamentals: HASH

SHA256 Hash

Data:

#aaaBC2018

Hash:

20da052a5e8a792312baed0c42b816ae3da64707ad9a3b6af9dc0d0aeadd3eb9

https://anders.com/blockchain/

Fundamentals : BLOCK

Block

Block:	#	1

Nonce:	106048

Data:	#aaaBC2018

Hash:	0000c88453e09fbf9aa1afdad1b09a773b2e91f4e3f55cf94228d3a98a1652b7

Mine

https://anders.com/blockchain/

Fundamentals : Blockchain

https://anders.com/blockchain/

Fundamentals : Distributed B\C


https://anders.com/blockchain/
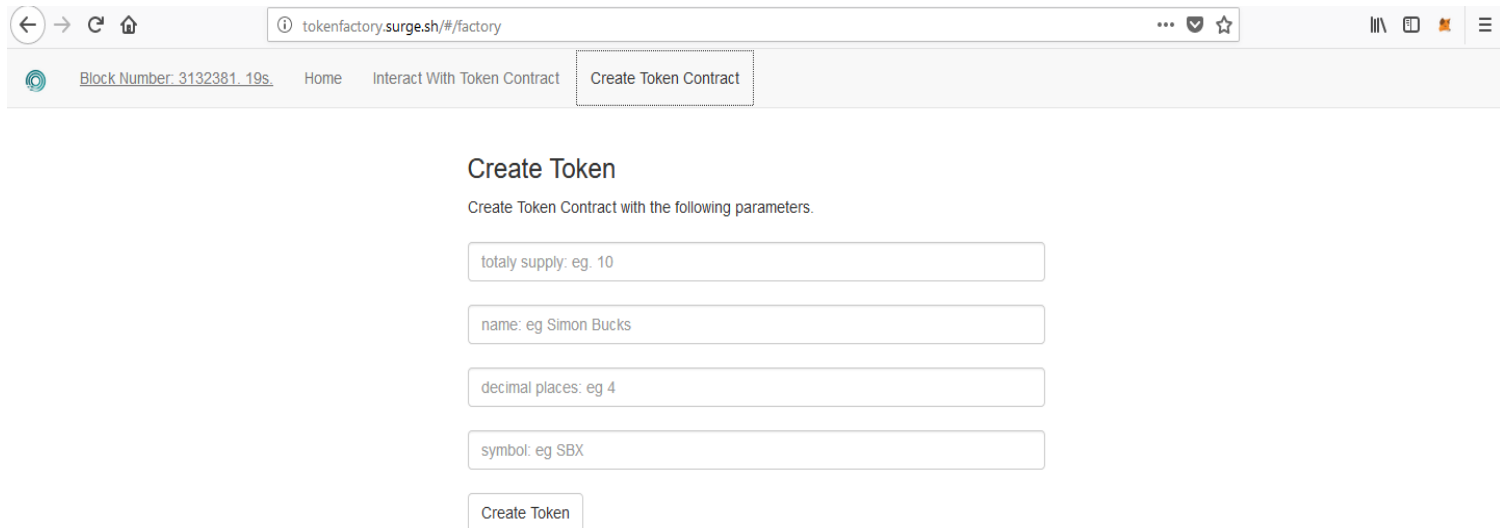
Fundamentals : Install Digital Wallet



https://metamask.io/
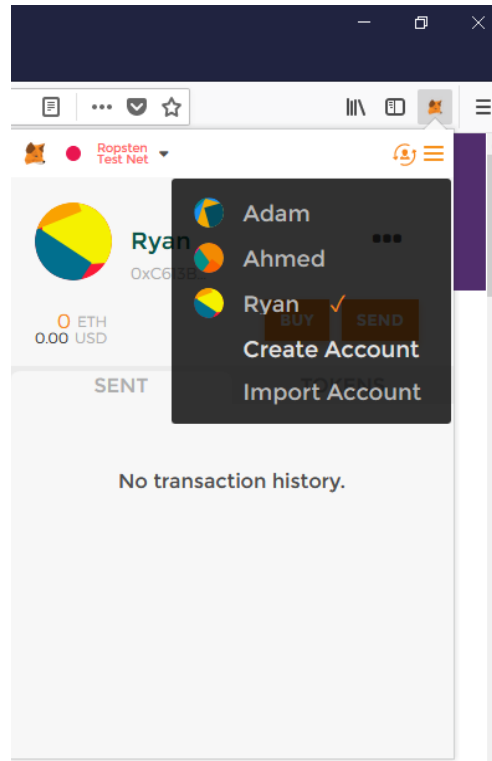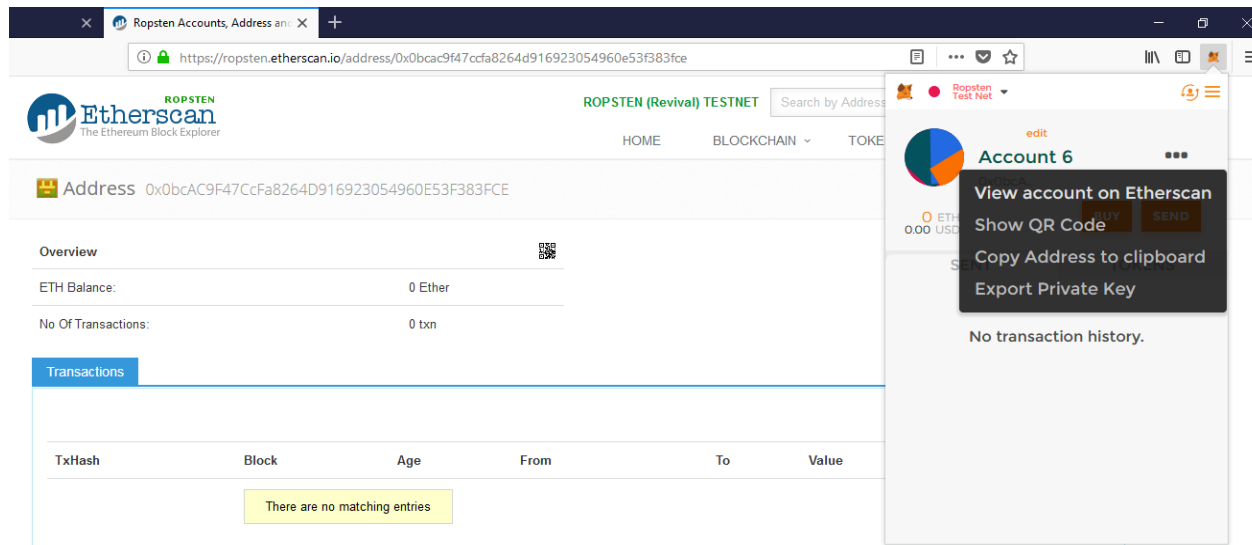
Fundamentals : Create a Token

http://tokenfactory.surge.sh/

Fundamentals : Audit on Blockchain

https://ropsten.etherscan.io

LO1 - Fundamentals

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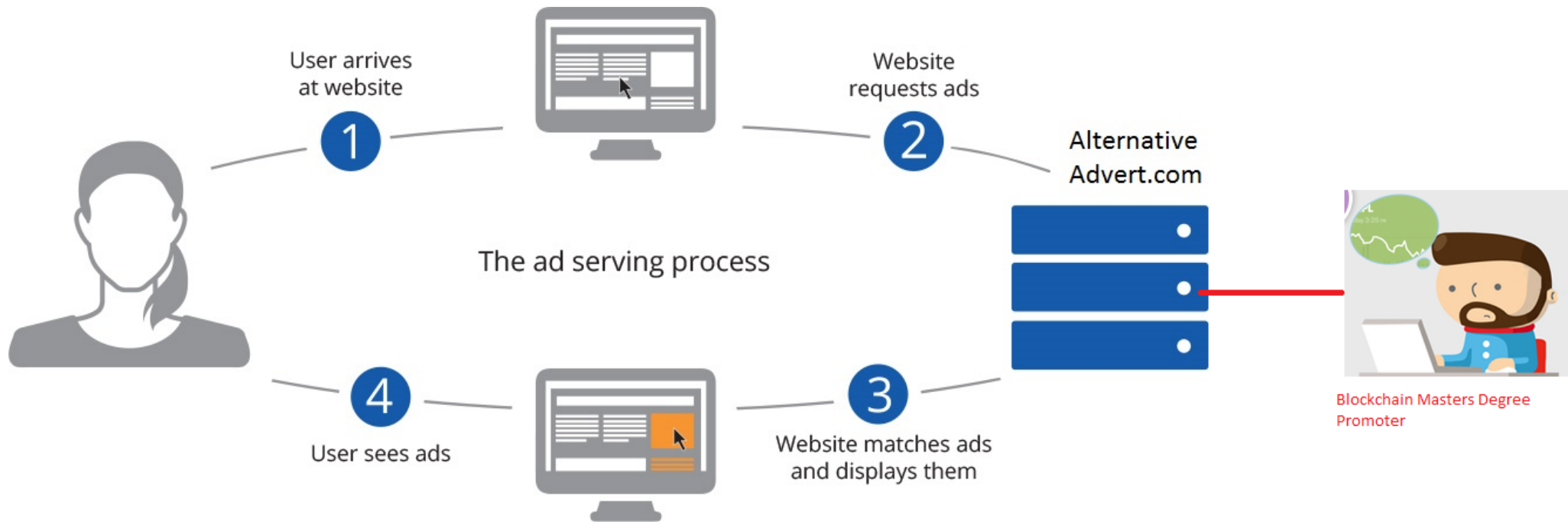
LO 2: Auditing problem in the online marketing industry.

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User arrives at website
1
Website requests ads
2
AlternativeAdvert.com

The ad serving process

User sees ads
4
Website matches ads and displays them
3

Blockchain Masters Degree Promoter

90 viewed ad   100 viewed ad

LO 2: Auditing problem in the online marketing industry.

90 viewed ad

100 viewed ad
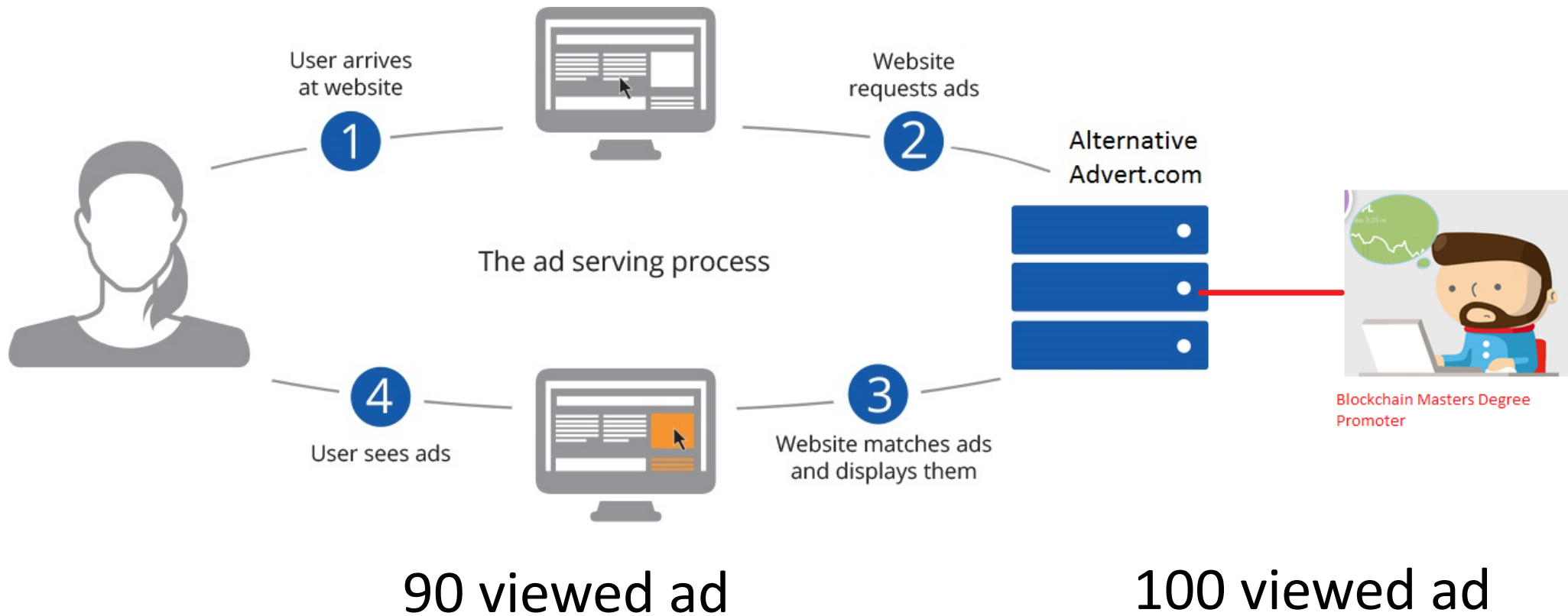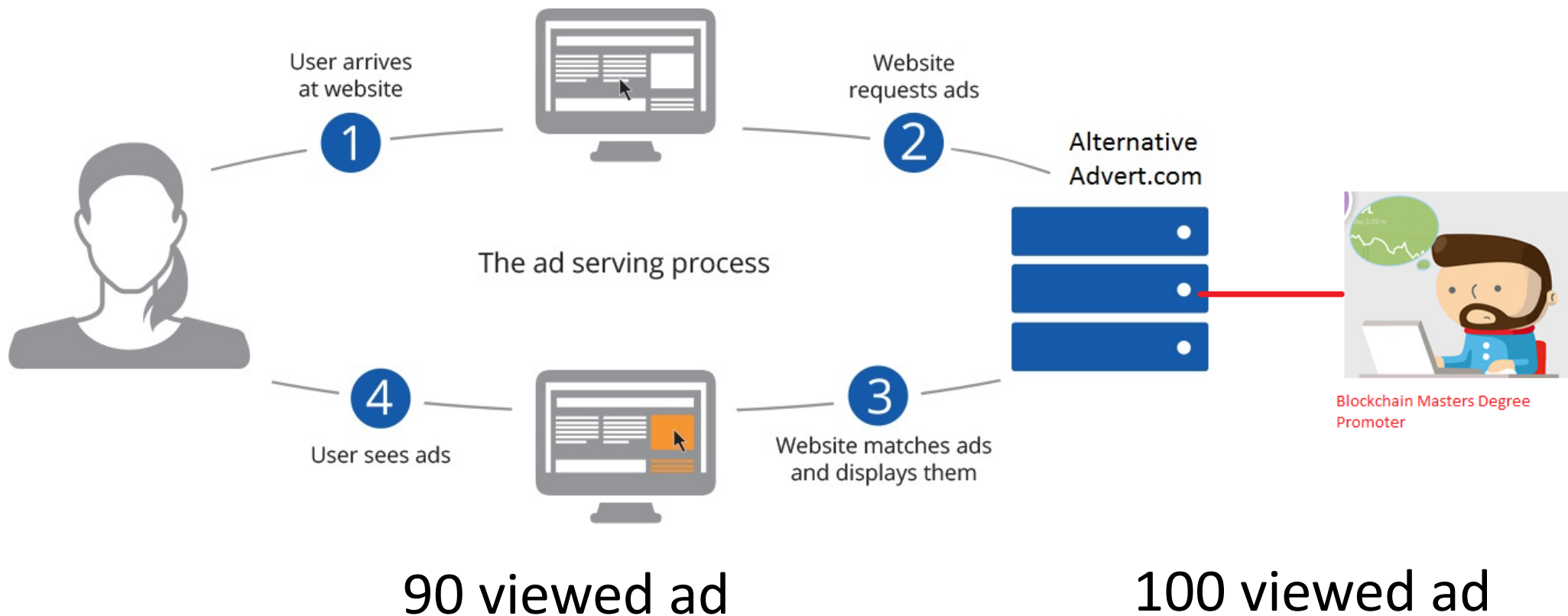
10% difference is an accepted Standard due to different accounting Systems

LO3. Proposed auditing solutions and their current challenges.

- A triple entry system has been discussed in the literature to provide a more reliable recording system where a neutral intermediary along with each party creates a record of a transaction.

- The neutral intermediary would be a blockchain because it would be distributing and automating the storage and verification process.

LO3. Proposed auditing solutions and their current challenges.
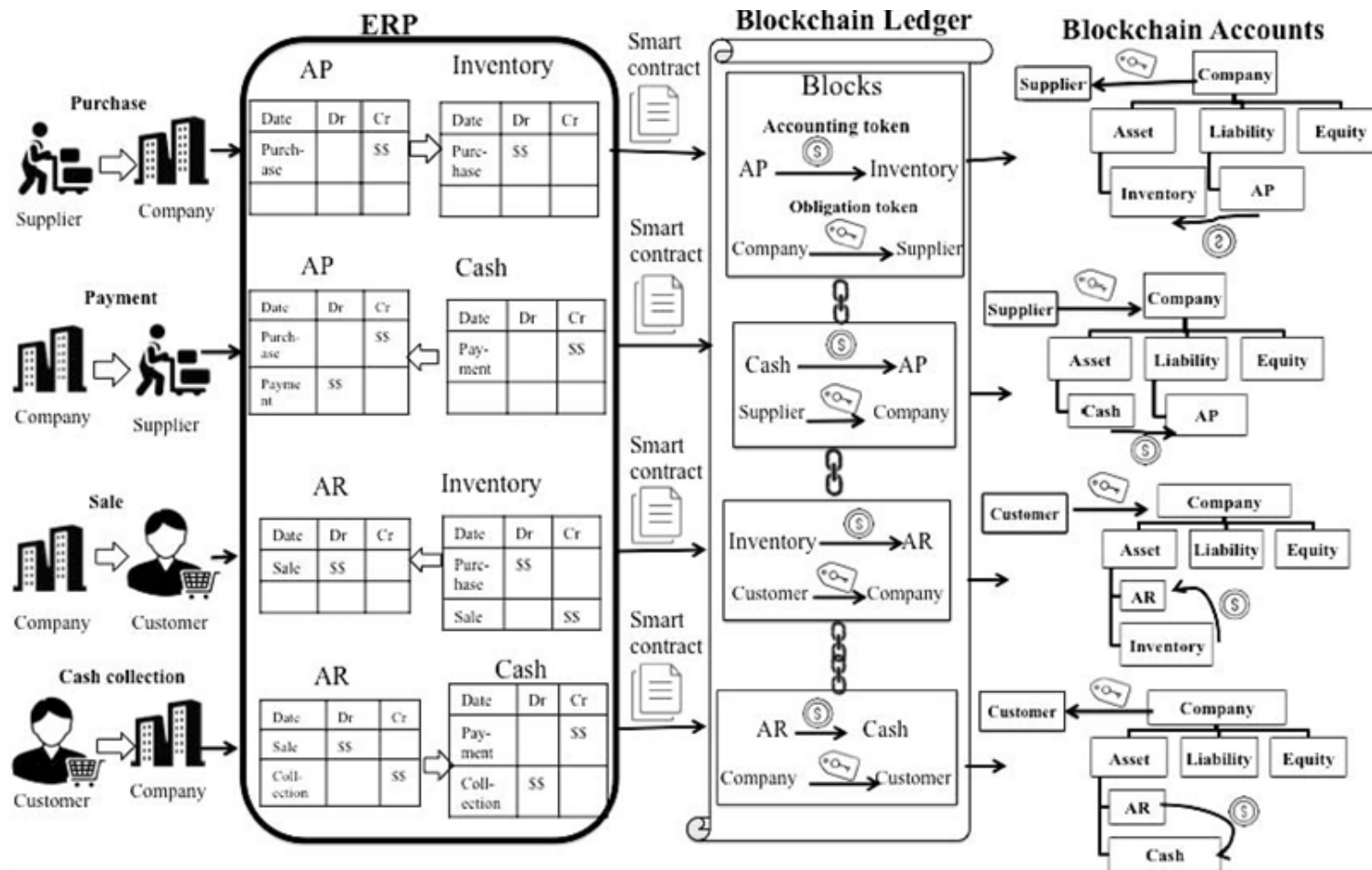
Dai, Jun, and Miklos A. Vasarhelyi. "Toward blockchain-based accounting and assurance." *Journal of Information Systems* 31.3 (2017): 5-21.

LO3. Proposed auditing solutions and their current challenges.
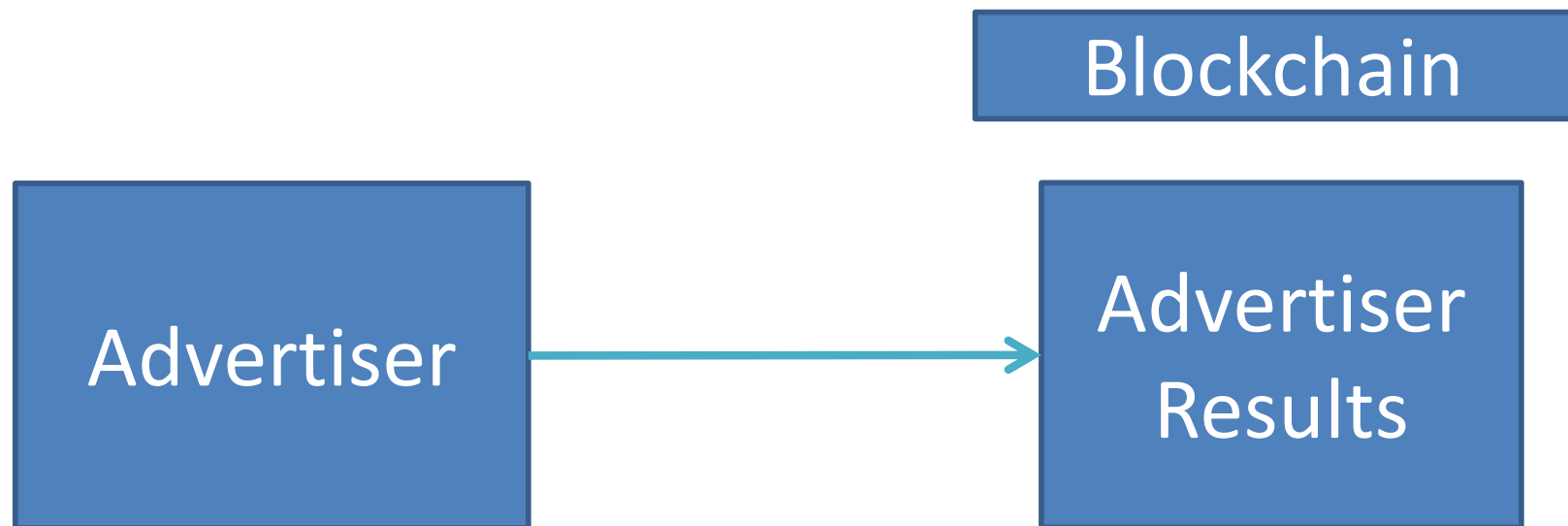
Blockchain

Advertiser → Advertiser Results

LO3. Proposed auditing solutions and their current challenges.

Blockchain

Advertiser → Advertiser Results

Publisher → Publisher Results

LO3. Proposed auditing solutions and their current challenges.

We have 2 different realities on the Blockchain
We need 1 reality!

Bill McCarthy and Graham Gal

Advertiser

Publisher

Blockchain

Advertiser Reality

Publisher Reality

LO4. Introducing N+1 Accounting Entry Systems

Advertiser

Blockchain

① **Publisher**

② **Viewer**

Reconciled based on viewer collected token on approved links already posted on the Blockchain
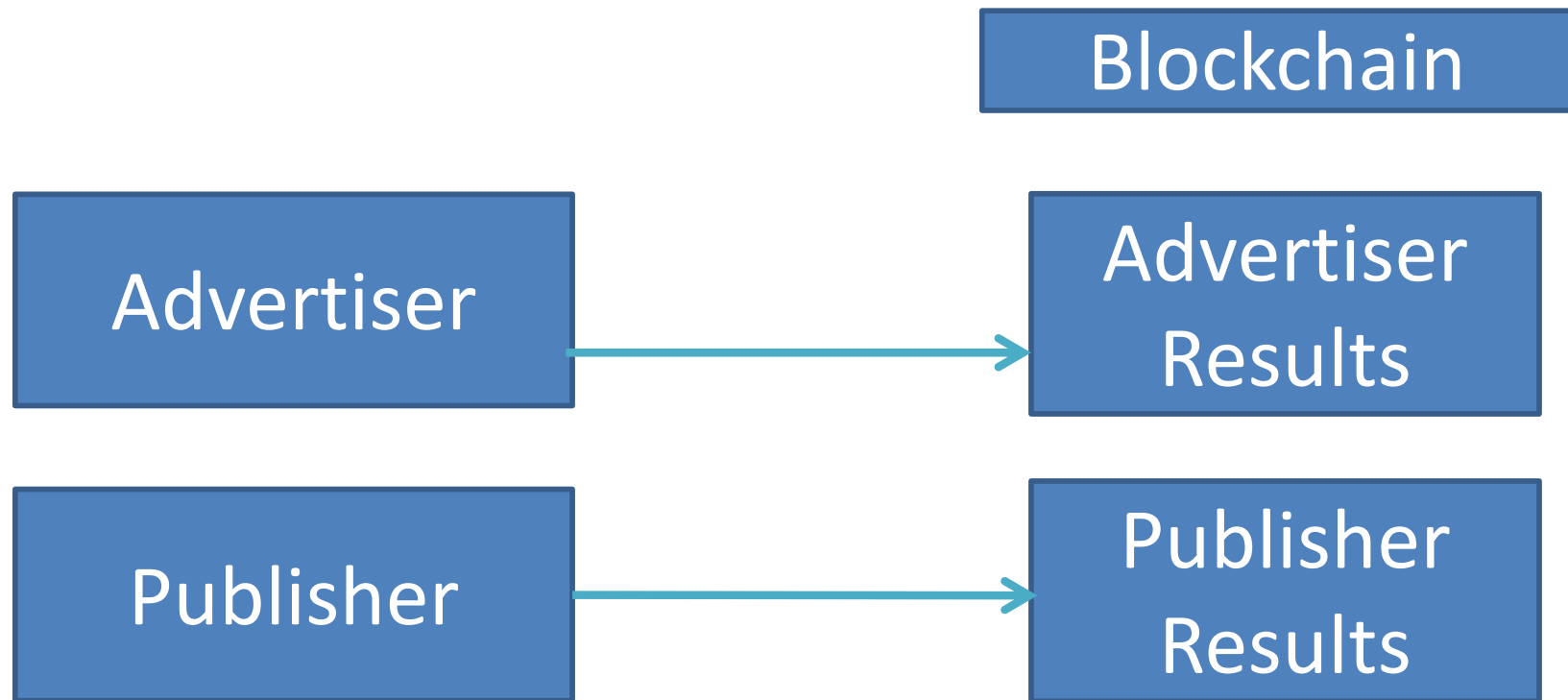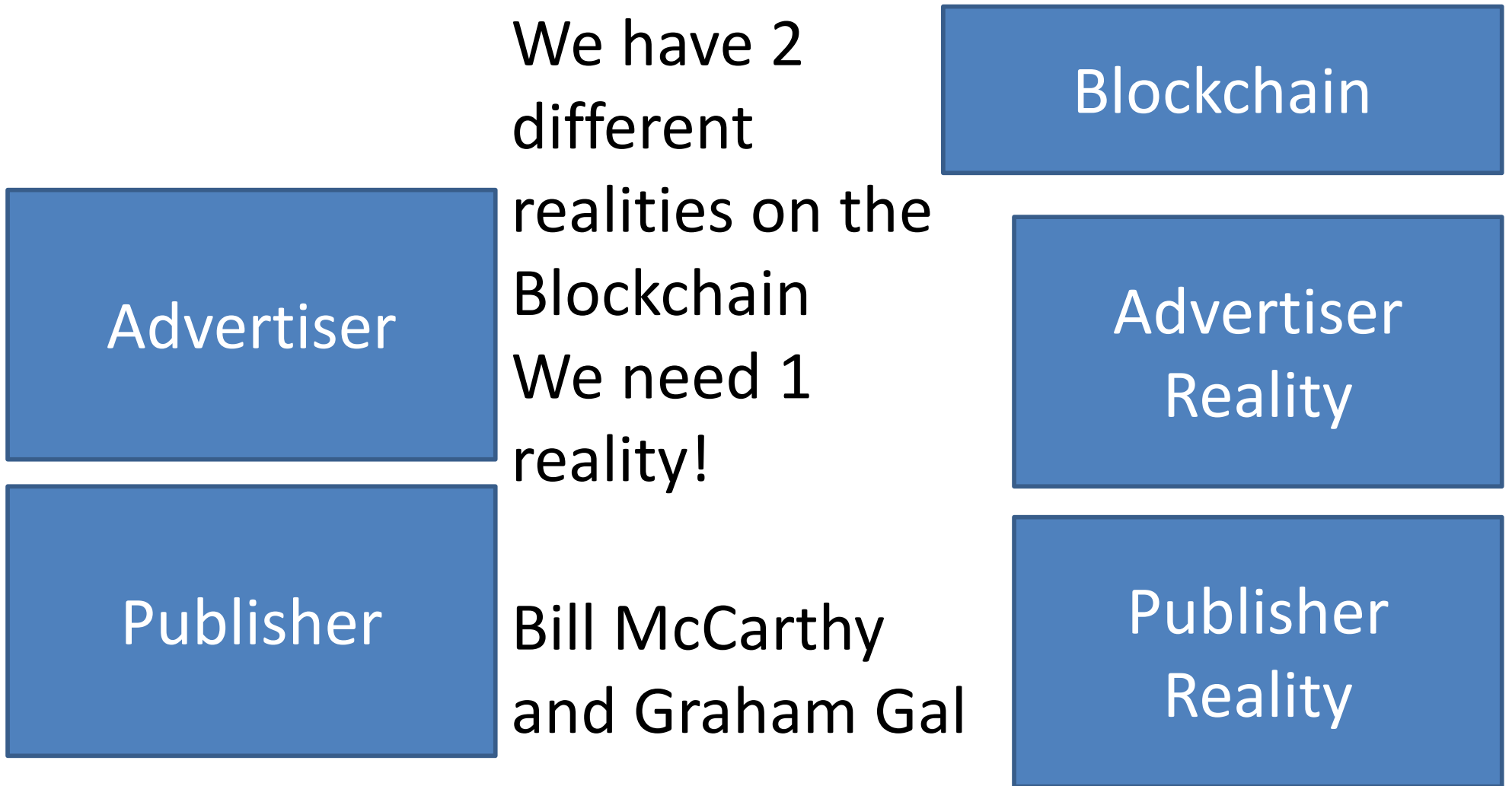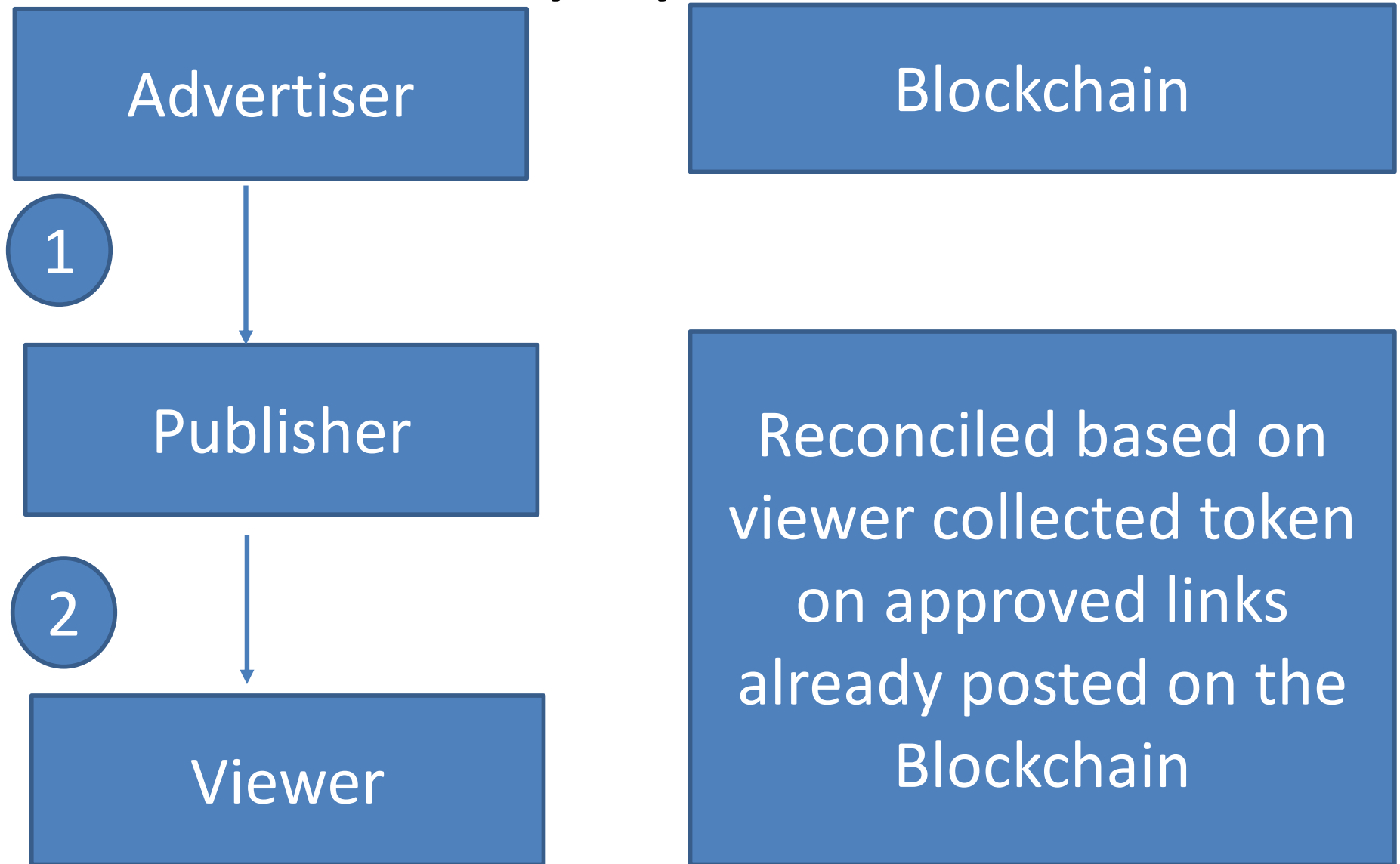
LO4. Introducing N+1 Accounting Entry Systems

- The model presented can not address the multiple reality scenarios.

- Views of blockchain based on role helps within the organization but it can not help when different realities exists between different organizations

LO4. Introducing N+1 Accounting Entry Systems

- In this case, a new notion of an N+1 Accounting Entry System is presented when multiple parties are needed to create ONE reality by closing the cycle.

LO4. Introducing N+1 Accounting Entry Systems

Advertiser

Blockchain

(1)

Publisher

(2)

Viewer

Reconciled based on viewer collected token on approved links already posted on the Blockchain
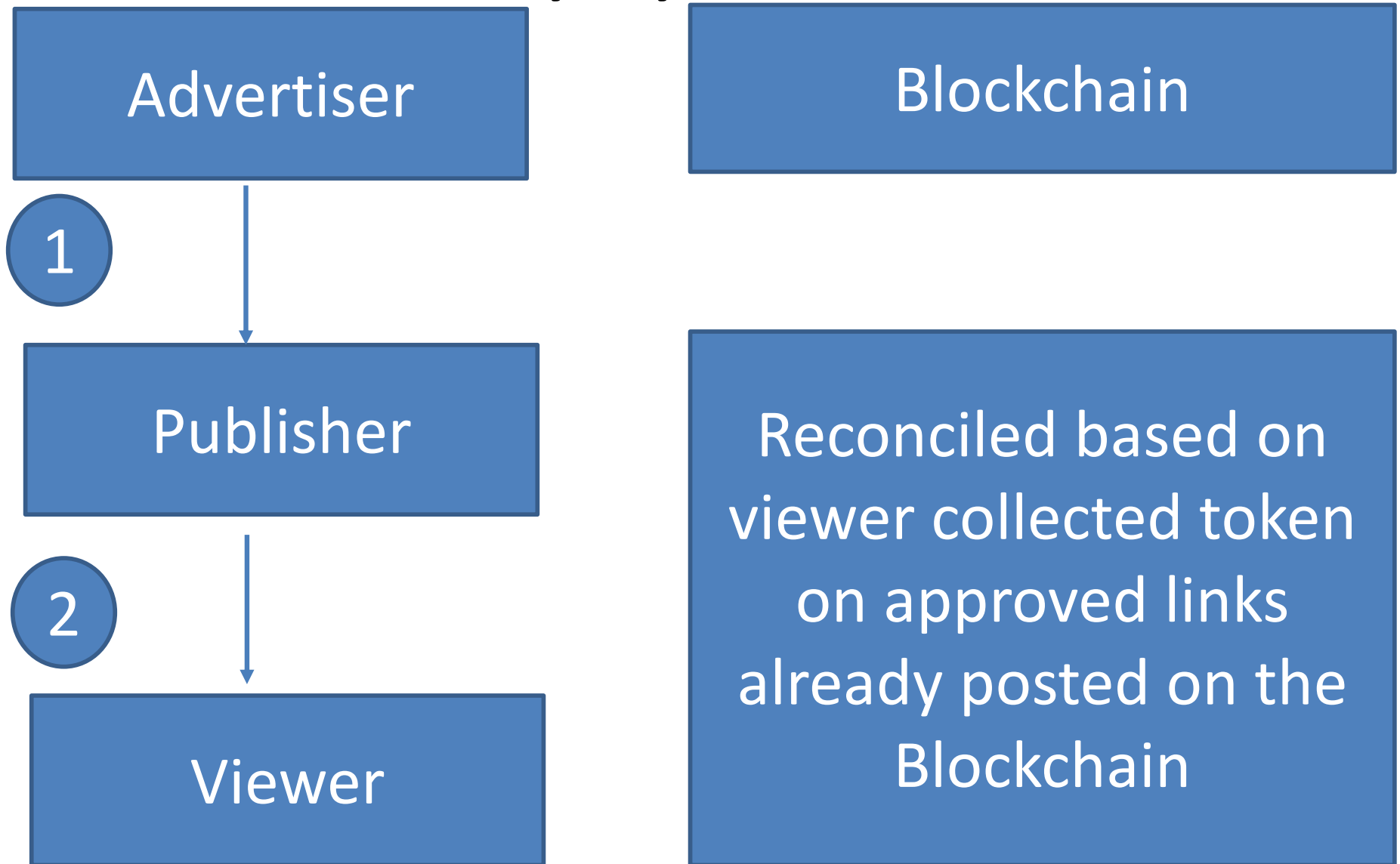
LO4. Introducing N+1 Accounting Entry Systems

Advertiser

①

Publisher

②

Viewer

Creating **1 reality**, where viewer continues to receive tokens every time she sees an ad on a pre-approved webpage, that is already published on the Blockchain.

Blockchain

Reconciled based on viewer collected token on approved links already posted on the Blockchain

https://youtu.be/lxORjqEt_c4

LO4. Introducing N+1 Accounting Entry Systems

- If three parties are involved in a transaction, a quadruple accounting entry system is needed (N+1), and again, blockchain technology can enforce the reliability and the authenticity of the transaction, while maintain the privacy of the parties' identity.

LO5. ICO common structures and different types of tokens.

- There are different strategies to structure an ICO. The number of tokens is not that important, as it can be subdivided, what matters is the percentage distribution of the tokens. In that event, a number of parameters need to be considered.

LO5. ICO common structures and different types of tokens.

- It is a good practice to initiate the token selling into phases so that the entire selling process is concluded in 60 days.

- Having phases helps build the momentum and allows issuers to adjust the offering marketing strategy accordingly.

LO5. ICO common structures and different types of tokens.

- Setting a price for the tokens should be in fiat money due to the volatility of the different dominant cryptocurrencies (i.e. bitcoin).

- At least 70% of the token needs to be sold, and the remaining 30% are to be set aside for overhead and growth.

- The 30% can be distributed on referral programs, growth efforts and to the founders.

LO5. ICO common structures and different types of tokens.

- Tokens are an alternative for startups to raise funds for a given project and it is a considered as crypto-assets.

- Depending on their capacity to influence in the investment of a company, they can be classified as follows :
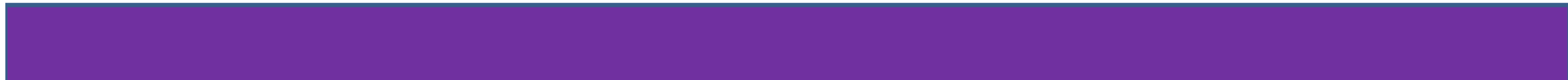
LO5. ICO common structures and different types of tokens.

- **Security token:** Not exempt from Federal laws or any other governing security. It is also known as "investment token" which refers to traditional instruments that startups can use, such as: shares or bonds.

- **Utility token:** Exempt from Governing regulations and represents a future access of products and services which are not subjected to have an influence.

LO5. ICO common structures and different types of tokens.

- Learn from the others by looking at existing whitepapers
- https://www.coinhills.com/ico
- https://icosource.io/ico-bounties/

Teaching Case Efficacy

- What is an ICO? / What is a hashed string?
- Explain why is it hard to alter a blockchain?
- Provide an Example where blockchain can help solving an existing industry problem.
- Explain the N+1 Accounting entry system
- If you are starting your own ICO, how would you distribute the tokens among the developers, the investors, and the application.
- What is the difference between a security token and a utility token.

Thank you

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