

Introduction to Smart Contract

@juinc, Taipei Ethereum Meetup



Taipei Ethereum

Outline

- Who are We?
- What is Ethereum?
- How does Smart Contract Work?
- Application of Smart Contract: EtherDelta

Who are We? (1)

- Taipei Ethereum Meetup
- Sharing knowledge of blockchain technology
- We have:
 - [Monthly Meetup](#)
 - [Articles on Medium](#)
 - [Slack Channel](#)
 - [Github](#)
 - Facebook [Group](#) & [Fanpage](#)
 - Conference!!

Who are We? (2)

BeyondBlockTaipei 2017

Vitalik is HERE!



The banner features a dark blue background. On the left is a 3D isometric cube with blue and white faces. To its right, the text 'BEYOND BLOCK TAIPEI 2017' is written in large, white, bold, sans-serif capital letters. The date '25th November' is written in a smaller white font between 'BLOCK' and '2017'. Below the text is a stylized, light blue city skyline with various building shapes and a few white clouds. At the bottom of the banner is a white horizontal bar containing the following information:

- Organizer:** Taipei Ethereum, accompanied by a black and white geometric logo.
- Sponsors:** A row of logos including COBINHOOD (a green hexagon), InfiniteChain (a blue 'i' logo), BitoEX (a blue 'B' logo), AMIS (a blue line-art logo), WHALE (a blue whale logo), CONSENSUS INNOVATION (a red heart logo), and LO3 ENERGY (a green square logo).

What is Ethereum (1)?

A platform that runs decentralized applications

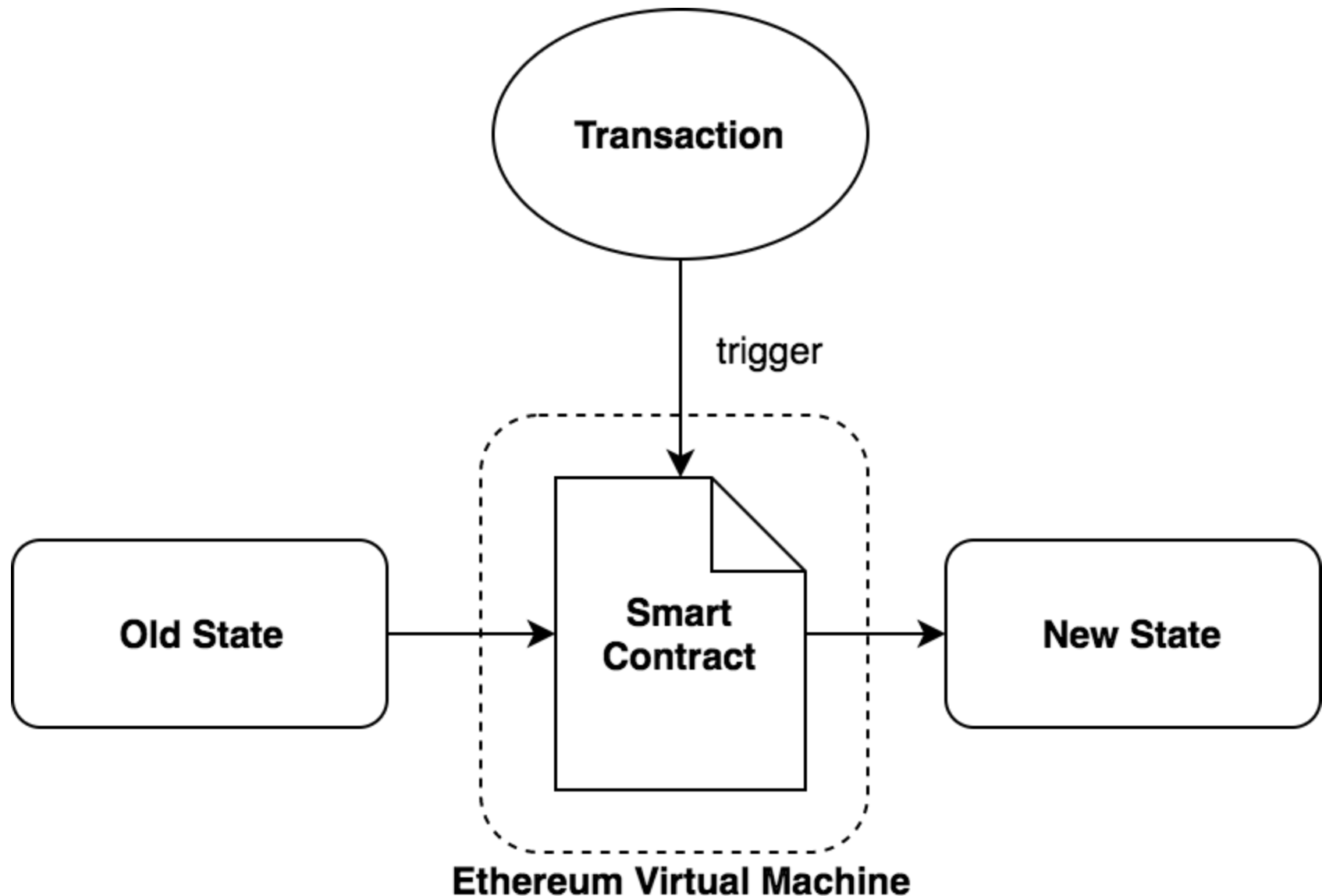


What is Ethereum (2)?

Difference between Bitcoin and Ethereum

- State Modeling (UTXO v.s. World State)
- Rewarding Mechanism (uncle blocks are introduced)
- Turing Complete Programmability (smart contract)

How Does Smart Contract Work (1)?



How Does Smart Contract Work (2)?

Ethereum Virtual Machine

- A machine that performs instructions from compiled bytecode (smart contract) which is stored in world state
- Quasi-Turing-Complete Machine, will raise out-of-gas(oos) exception if the paid gas is insufficient

Application of Smart Contract: EtherDelta (1)

2 types of contracts

- ERC20 Token Contract
- Exchange Contract

reference: [去中心化交易所—EtherDelta](#)

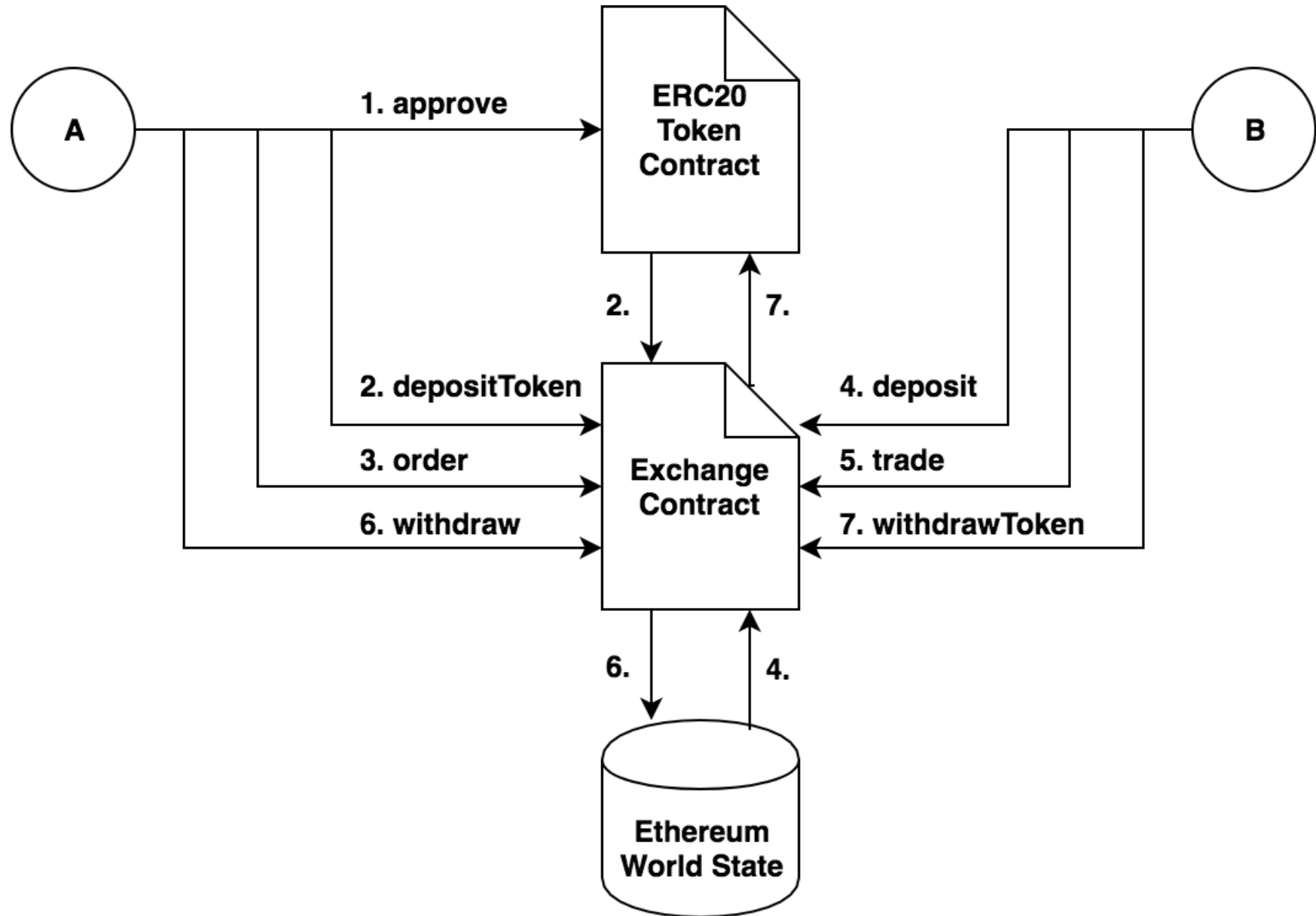
Application of Smart Contract: EtherDelta (2)

ERC20 Token

- ERC: Ethereum Request for Comments
- Spec of interface that token contract has to implement
- Interface including:
 - totalSupply
 - balanceOf
 - trasfer
 - transferFrom
 - approve
 - allowance

Application of Smart Contract: EtherDelta (3)

Exchange Contract



Conclusion

1. Smart contract makes ethereum powerful

2. Join us!

- For developers

Join our meetups and give us a talk

- For non-developers

Write some articles on trending or case study