EOS

THE NEXT STEP AFTER ETHEREUM?

Presented by

Tokenika

DISCLAIMER

- We are in no formal way associated with block.one, the company developing EOS code. We are just part of the emerging EOS community.

- We have no interest in you buying EOS tokens, and this certainly should not be treated as financial advice. Our goal is to encourage you to take interest in the concept and possibly consider building businesses on top of EOS.

CONTENT

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OUR BACKGROUND

- Manufacturing industry, real-estate, education and public agencies

- We are blockchain veterans
  - started with Bitcoin
  - Ethereum, BitShares, Steem and now EOS

- We actively participate in the blockchain space
  - FinTech Week in London & Blockchain Summit in Shanghai
  - Ethereum, Iota, Factom, Gnosis & EOS

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OUR BACKGROUND

QUICK SURVEY - ANSWERS

1. How much are we spending on BTC mining per day? What about ETH?

   BTC: 12 mln USD/day (4 bln USD/year)

   ETH: 6 mln USD/day (2 bln USD/year)

   Total raised by all ICOs so far: 3 bln USD

2. What is BTC average transaction fee? What about ETH?

   BTC: 3 USD

   ETH: 0.30 USD

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QUICK SURVEY - ANSWERS

3. How many transactions per second does Facebook require? What about Visa/MasterCard?

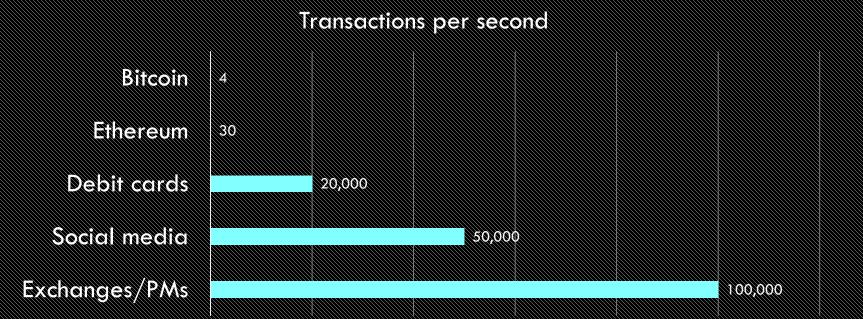   Facebook: 50,000 trxn/sec

    Visa/MasterCard: 20,000 trxn/sec

4. How many transactions per second is BTC able to process? What about ETH?

    BTC: 4 trxn/sec

    ETH: 30 trxn/sec

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WHAT DO DECENTRALIZED APPS REQUIRE?

Scalable and cheap to run

Free for the users

Bug recovery

Upgradeable

Easily accessable

No fancy cryptographic stuff

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MAJOR PROBLEMS FACING THE CRYPTO-SPACE

- Scalability
- Transaction fees
- Private key security
- Blockchain governance

- Smart-contracts running amok
- High cost of app development
- Bad user experience
- No bridges between blockchains

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#1 SCALABILITY

- What is high-performance?

- Huge gap between what we can do and what we need to be able to do

- Second layer of transaction processing:

  - Lightening Network for Bitcoin

  - Raiden for Ethereum

- Ethereum's Plasma - inherently less secure

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#2 HIGH & UNPREDICTABLE TRANSACTION FEES

- No economic viability at the current level of transaction fees

- Even if they become low, they are still unpredictable

- Sometimes you need no fees at all

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#3 PRIVATE KEY SECURITY

- Increasing number of unsophisticated users

- Not only money: also identity & reputation

- Inherent feature?

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#4 BLOCKCHAIN GOVERNANCE

- Decentralized decision making:
  - business-as-usual situations
  - emergency situations
- Different value systems = different expected outcomes

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#5 SMART-CONTRACTS RUNNING AMOK

Build unstoppable applications

...runs smart contracts: applications that run exactly as programmed without any possibility of downtime, censorship, fraud or third party interference.

These apps run on a custom built **blockchain, an enormously powerful shared global infrastructure that can move value around and represent the ownership of property.**

This enables developers to create markets, store registries of debts or promises, move funds in accordance with instructions given long in the past (like a will or a futures contract) and many other things that have not been invented yet, all without a middle man or counterparty risk.

The project was bootstrapped via an ether presale in August 2014 by fans all around the world. It is developed by the Ethereum Foundation, a Swiss nonprofit, with contributions from great minds across the globe.

On traditional server architectures, every application has to set up its own servers that run their own code in isolated silos, making sharing of data hard. If a single app is compromised or goes offline, many users and other apps are affected.

On a blockchain, anyone can set up a node that replicates the necessary data for all nodes to reach an agreement and be compensated by users and app developers. This allows user data to remain private and apps to be decentralized like the Internet was supposed to work.

#5 SMART-CONTRACTS RUNNING AMOK

- Formal verification is hard

- Ethereum : „Build unstoppable applications"

- Smart-contracts running amok not handled by Ethereum

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#6 HIGH COST OF APP DEVELOPMENT

- Nothing is coming to market

- Devs stuck on low-level stuff

- Complex things attempted in inefficient scripting environment

- Generic solutions built with smart-contracts will be expensive to use

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#7 BAD USER EXPERIENCE

- Way below centralized apps

- Responsive front-end requires proper back-end

- Entire infrastructure around blockchain is needed

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#8 NO BRIDGES BETWEEN BLOCKCHAINS

- Impossible to move value across blockchains

- Precondition: asynchronous communication

- Potential solutions are several years away (e.g. Polkadot)

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WHAT IS EOS?

EOS is a general-purpose smart-contract platform, just like Ethereum.

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WHAT IS EOS?

EOS is a holistic approach to high-performance general-purpose consensus.

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"EOS IS THE BLOCKCHAIN FOR BUILDING COMMERCIAL SCALE DECENTRALIZED APPLICATIONS THAT ARE INDISTINGUISHABLE FROM CENTRALIZED ALTERNATIVES."

Daniel Larimer, CTO of block.one

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BLOCKCHAIN EVOLUTION

- payment system (Bitcoin)

- smart-contract system (Ethereum)

- operating system for decentralized applications (EOS?)

EOS is an operating system for building decentralized applications.

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TOP FOUR MOST USED BLOCKCHAINS

Average number of actual trxns per sec

Steem
Ethereum
BitShares
Bitcoin

0 1 2 3 4 5 6 7 8 9

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#1 PROCESSING POWER ON THE PRIMARY LAYER

- Fixed number of block producers

- Blocks produced exactly every 3 seconds (or even 500 ms)

- Consensus over events (or messages) instead of consensus over state

- Parallel processing

- No concept of gas

End result: at least 50,000 txns/sec on day one.

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#2 MUCH WIDER CONTEXT

- Errors in smart-contracts & conflicts are unavoidable

- Built-in governance mechanisms:
  - constitution encoded in the blockchain (legally binding)
  - arbitration for resolving disputes (legally binding)
  - stakeholders voting on important decisions

- Freeze & fix broken apps

- Designed with the needs of serious businesses in mind

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#3 BLOCKCHAIN GOVERNANCE BUILT-IN

- Elected block producers (a.k.a. witnesses)

- Efficient decision making

- Powered by reputation: hard to earn, easy to lose

- Ultimate power always rests with the shareholders

- Self-funded community benefit apps

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#4 COMPLETE OPERATING SYSTEM

- Low-level features and services embedded in the blockchain: account permissions, account recovery, scheduling, authentication, inter-app communication, biometric 2nd factor validation

- Private databases for every contract

- Integrated storage solution based on IPFS, free to use

- App devs only need to write code for what's unique for their application

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#5 NO TRANSACTION FEES

- EOS token is never consumed, no concept of gas

- If you own 1% of the tokens, you own 1% of the network

- You can own blockchain resources OR rent them

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#6 ASYNCHRONOUS COMMUNICATION

- Asynchronous communication from the start

- Internal communication with local applications, as well as external communication with other blockchains

- Private enterprise chains can communicate with a public chain
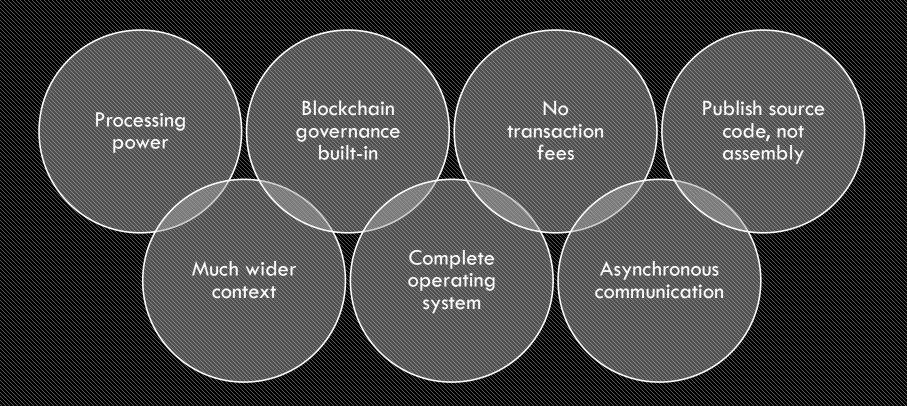
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#7 PUBLISH SOURCE CODE, NOT ASSEMBLY

- Source code is sacred, as it captures intentions

- Source code can be recompiled in the future

- Opens EOS up for multiple virtual machines and upgradable smart-contracts

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UNIQUE FEATURES - RECAP

Processing power

Blockchain governance built-in

No transaction fees

Publish source code, not assembly

Much wider context

Complete operating system

Asynchronous communication

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WHAT ARE THE STRONG POINTS?

- Small yet very efficient & experienced team

- Concept proved in practice

- Rare mix of the top talents, entrepreneurial skills, and strong financial backing

- Web Assembly as a virtual machine

- DPOS - the most decentralized & resilient consensus system out there

- Commitment to spend 1 bln USD to boost the ecosystem

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"EOS IS THE MOST WELL FUNDED PROJECT IN HISTORY AND WE PLAN TO SOON ANNOUNCE A PROGRAM FOR UP TO ONE BILLION USD OF CAPITAL FOR EOS PROJECTS."
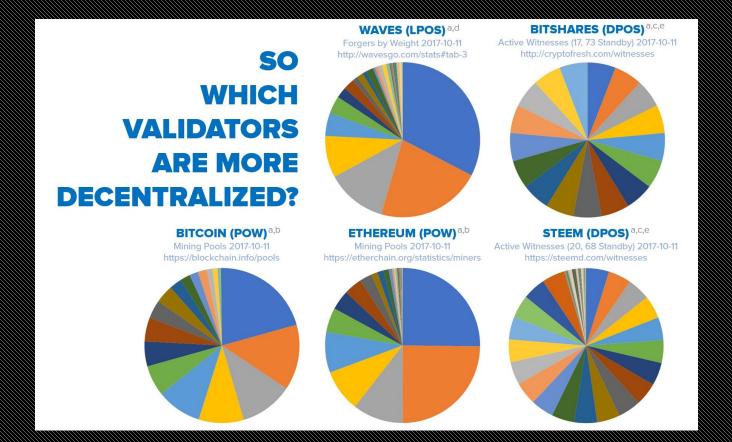
Brendan Blumer, CEO of block.one

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DPOS – DELEGATED PROOF OF STAKE

- Objectively the most decentralized & resilient system in existence

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- Objectively the most decentralized & resilient system in existence

- Confirms transactions with 99.9% certainty in an average of just 1.5 sec

- When in trouble, degrades in a graceful, detectable manner that is trivial to recover from

- Continues to function even when a majority of producers fail, or a large minority of producers go rouge

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WHAT ARE THE WEAK POINTS?

- Low awareness and quite a lot of negative (undeserved?) perception

- Almost non-existent ecosystem and very few developers

- C++ has a very steep learning curve

- Not live yet

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EOS ROADMAP

Project started in
Q1 2017

December 2017
public testnet

Q1 & Q2 2018
devoted to testing
and building
development tools
& docs

MVP stage called
EOS Dawn 1.0

January 2018
all major
functionalities
deployed

The EOS
blockchain goes
live in June 2018,
most probably
with the parallel
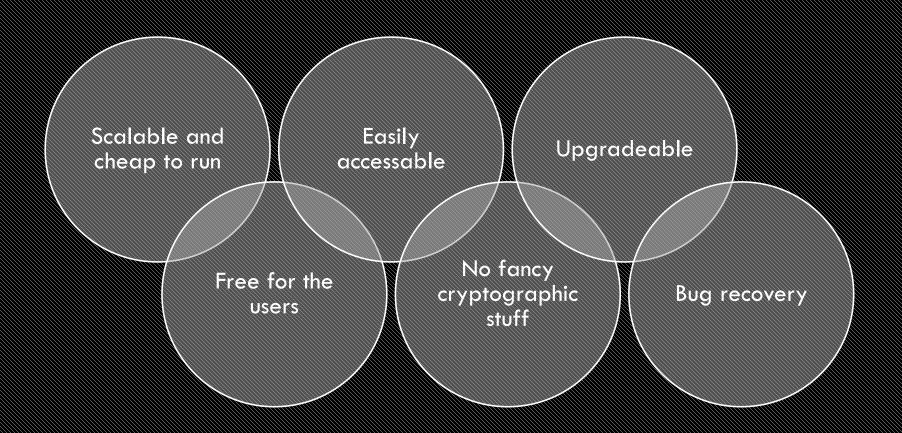processing feature
already enabled

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EOS WRAP-UP

- Most important: the way EOS is going to operate

- Scalable, flexible & usable

- Extremely business oriented

- Incremental improvement to stuff that's already been proven to work

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MAJOR PROBLEMS - REVISITED

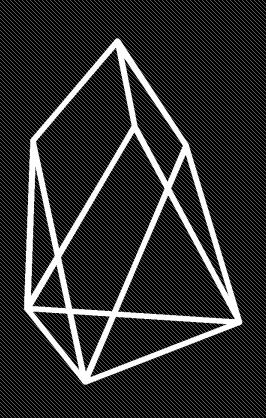| Scalability	Processing power & separation of authentication from action
Transaction fees	No transaction fees
Private key security	Operating system (account recovery)
Blockchain governance	Reputation-based consensus mechanism
Smart-contracts running amok	Freeze & fix broken apps
High cost of app development	Operating system (low-level features built-in)
Bad user experience	Back-end support for responsive front-end & web toolkit for UI
No bridges between blockchains	Asynchronous communication

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ABOUT TOKENIKA

- Focus on blockchain-based fundraising and digital asset management solutions, e.g. Neufund, Melonport, Iconomi

- Software house dedicated to building dApps (both on EOS and ETH)

- Aiming to be elected as one of the 20 block producers for EOS

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WHAT WE NEED?

- Not looking for funding, looking for ways to spend money

- Looking for good ideas that can be converted into dApps

- Hiring developers with background in C++ and/or ETH smart-contracts

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THANK YOU
ANY QUESTIONS?

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