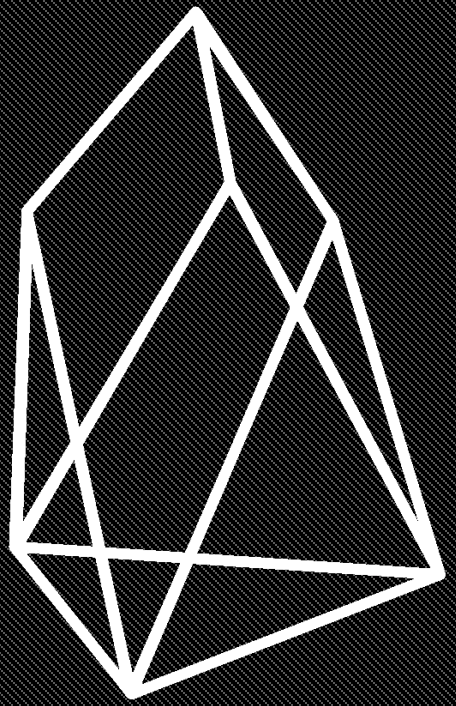

EOS

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

1. Our background
2. Quick survey
3. What do decentralized applications require?
4. Major problems facing the crypto-space
5. Introduction to EOS
6. About Tokenika

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

OUR BACKGROUND

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QUICK SURVEY - STATE OF THE BLOCKCHAIN 2017

1. How much are we spending on BTC mining per day? What about ETH?
2. What is BTC average transaction fee? What about ETH?
3. How many transactions per second does Facebook require? What about Visa/MasterCard?
4. How many transactions per second is BTC able to process? What about ETH?
5. Which are the top four most used blockchains currently in production?

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

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

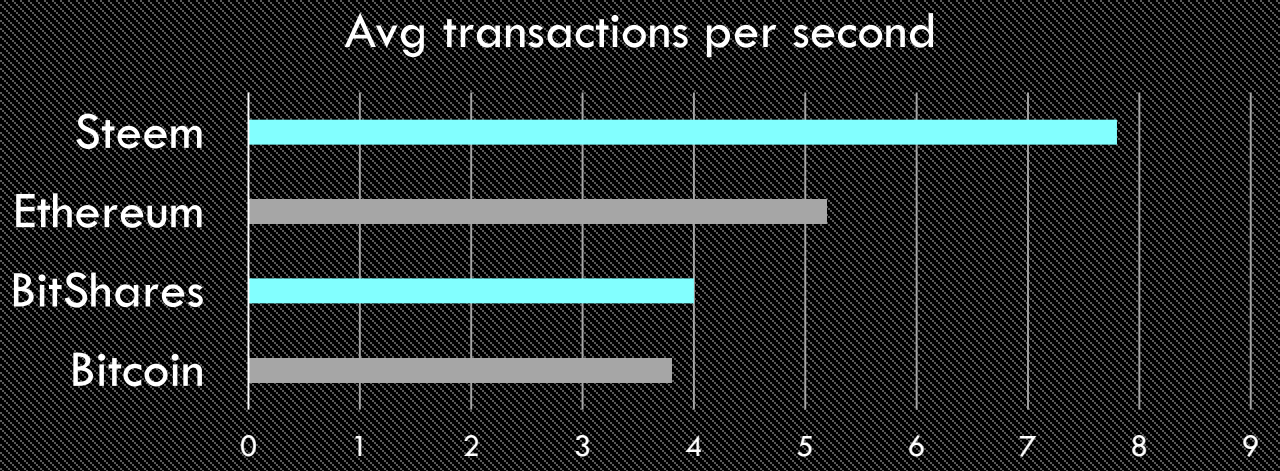
4. How many transactions per second is BTC able to process? What about ETH?

   BTC: 4 trxn/sec

   ETH: 30 trxn/sec

QUICK SURVEY - ANSWERS

5. Which are the top four most used blockchains currently in production?



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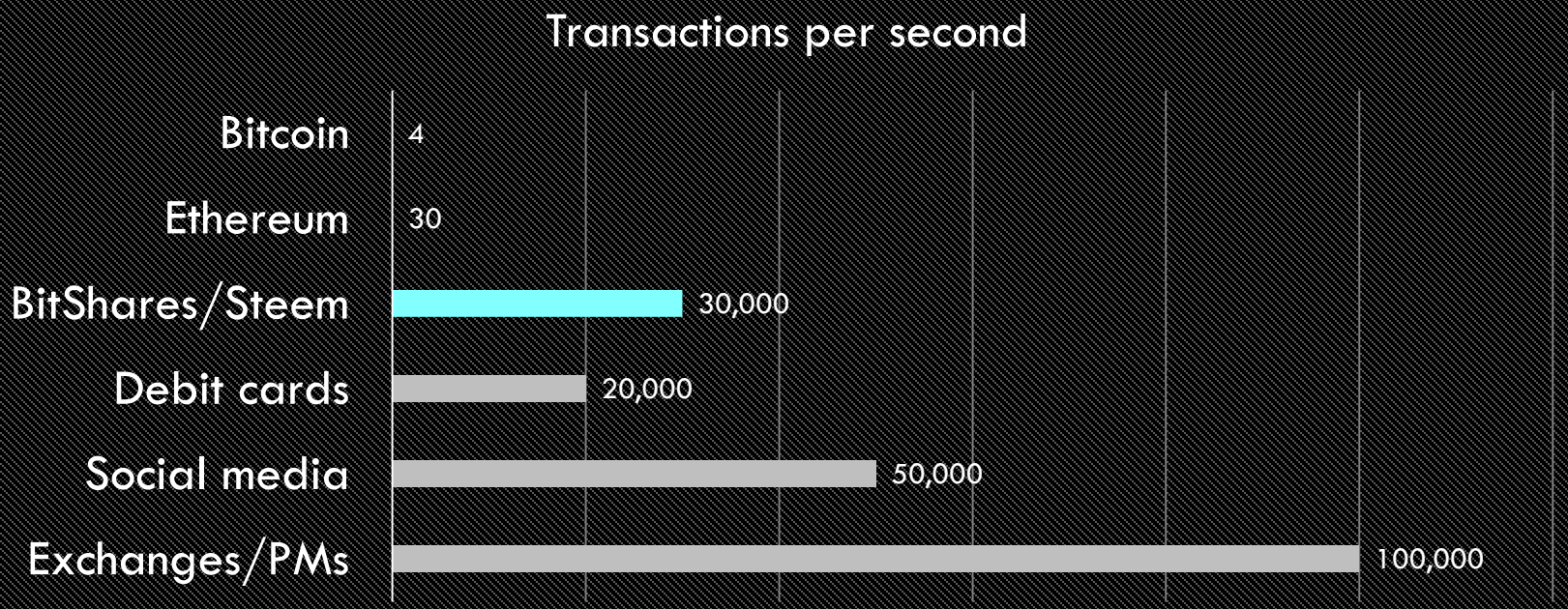
WHAT'S POSSIBLE VS. WHAT'S NEEDED



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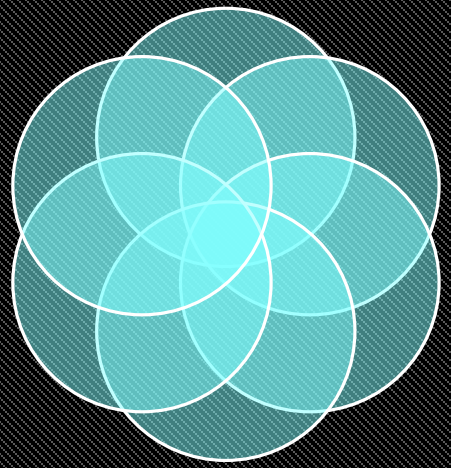
WHAT DO DECENTRALIZED APPS REQUIRE?

Scalable and cheap to run

Bug recovery



Free for the users

Upgradeable

Easily accessable

No fancy cryptographic stuff

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

MAJOR PROBLEMS

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

MAJOR PROBLEMS

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

MAJOR PROBLEMS

PRIVATE KEY SECURITY

- Increasing number of unsophisticated users
- Not only money: also identity & reputation
- Inherent feature?

MAJOR PROBLEMS

BLOCKCHAIN GOVERNANCE

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

MAJOR PROBLEMS

SMART-CONTRACTS RUNNING AMOK

- Formal verification is hard
- Ethereum : „Build unstoppable applications”

MAJOR PROBLEMS

SMART-CONTRACTS RUNNING AMOK

Build unstoppable applications

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.

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MAJOR PROBLEMS

SMART-CONTRACTS RUNNING AMOK

- Formal verification is hard
- Ethereum : „Build unstoppable applications”
- Smart-contracts running amok not handled by Ethereum

MAJOR PROBLEMS

HIGH COST OF APP DEVELOPMENT

- Nothing is coming to market
- Devs stuck on low-level stuff
- Complex things attempted in inefficient scripting environment

MAJOR PROBLEMS

BAD USER EXPERIENCE

- Way below centralized apps
- Responsive front-end requires proper back-end
- Entire infrastructure around blockchain is needed

MAJOR PROBLEMS

NO BRIDGES BETWEEN BLOCKCHAINS

- Impossible to move value across blockchains
- Precondition: asynchronous communication
- Several years away (e.g. Polkadot)

MAJOR PROBLEMS - RECAP

Scalability	Transaction fees	Private key security	Blockchain governance
Smart-contracts running amok	High cost of app development	Bad user experience	No bridges between blockchains

WHAT IS EOS?

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

WHAT IS EOS?

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

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

Daniel Larimer, CTO of block.one

BLOCKCHAIN EVOLUTION

- payment system (Bitcoin)
- smart-contract system (Ethereum)
- operating system for decentralized applications (EOS?)

EOS is an operating system for building decentralized applications.

WHAT FEATURES MAKE EOS UNIQUE WHEN COMPARED TO ETHEREUM?

- Processing power
- Much wider context
- Blockchain governance built-in
- Complete operating system
- No transaction fees
- Asynchronous communication
- Publish source code, not assembly

UNIQUE FEATURES

PROCESSING POWER

- 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.

UNIQUE FEATURES

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

UNIQUE FEATURES

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

UNIQUE FEATURES

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

UNIQUE FEATURES

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

UNIQUE FEATURES

ASYNCHRONOUS COMMUNICATION

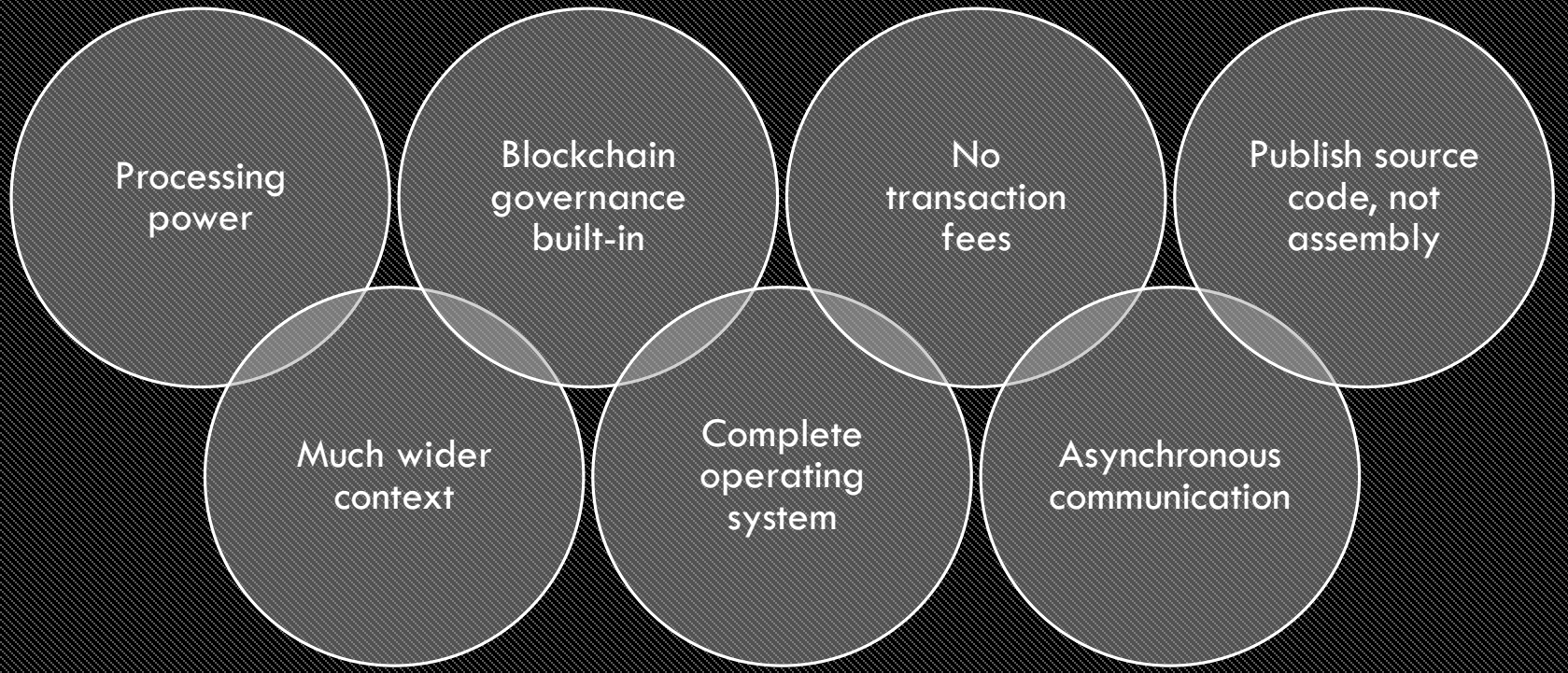
- Asynchronous communication from the start
- Internal communication with local applications, as well as external communication with other blockchains
- Private enterprise chains can communicate with a public chain

UNIQUE FEATURES

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

UNIQUE FEATURES - RECAP



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

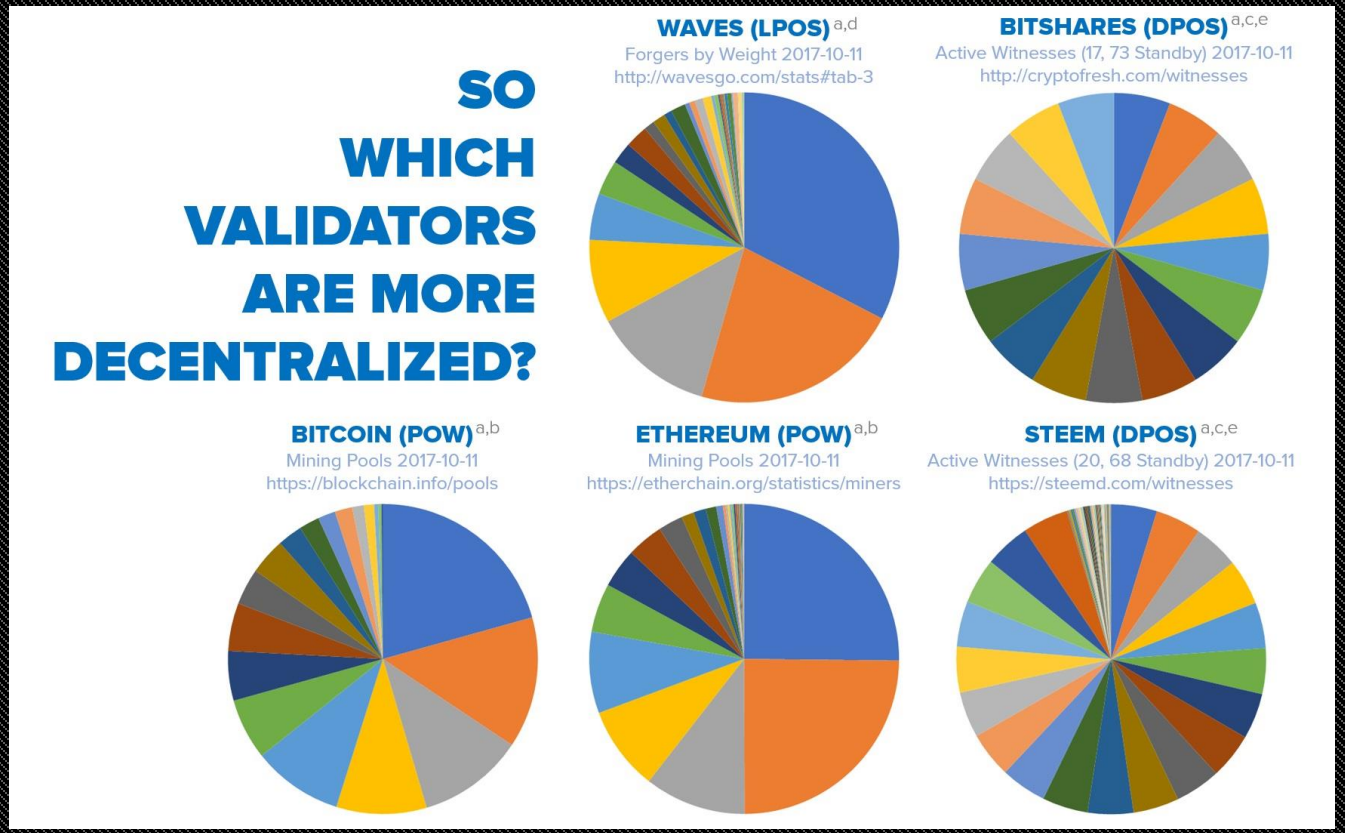
“EOS IS THE MOST WELL FUNDED PROJECT IN HISTORY AND WE PLAN TO SOON ANNOUNCE A PROGRAM FOR UP TO ONE BILLION USD OF CAPITAL FOR EOS PROJECTS.”

Brendan Blumer, CEO of block.one

DPOS – DELEGATED PROOF OF STAKE

- Objectively the most decentralized & resilient system in existence

DPOS – DELEGATED PROOF OF STAKE



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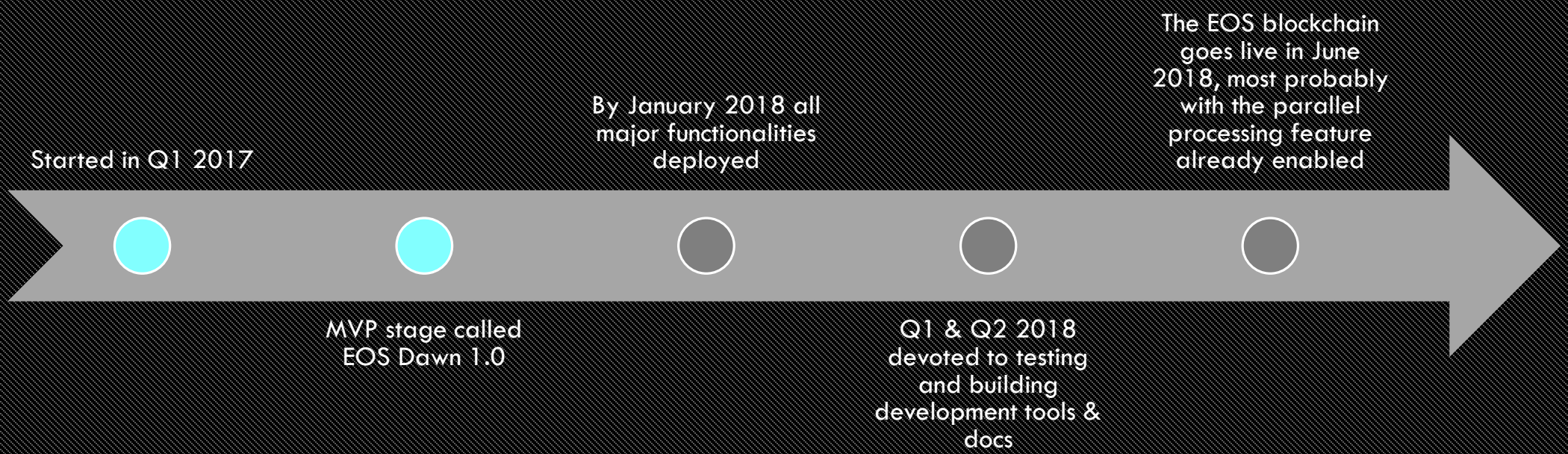
DPOS – DELEGATED PROOF OF STAKE

- 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

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

EOS ROADMAP



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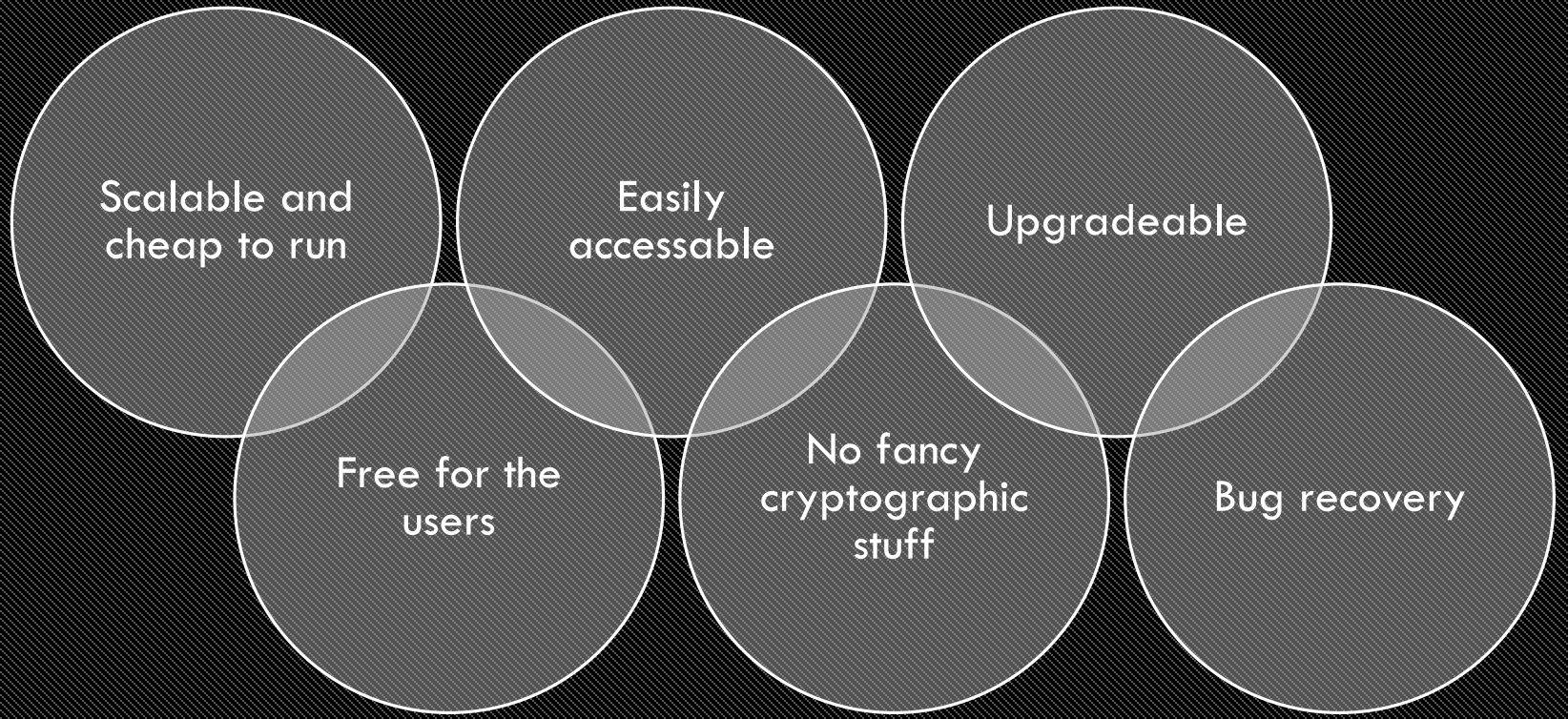
EOS WRAP-UP

- 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

EOS VS. DECENTRALIZED APPS REQUIREMENTS



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

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

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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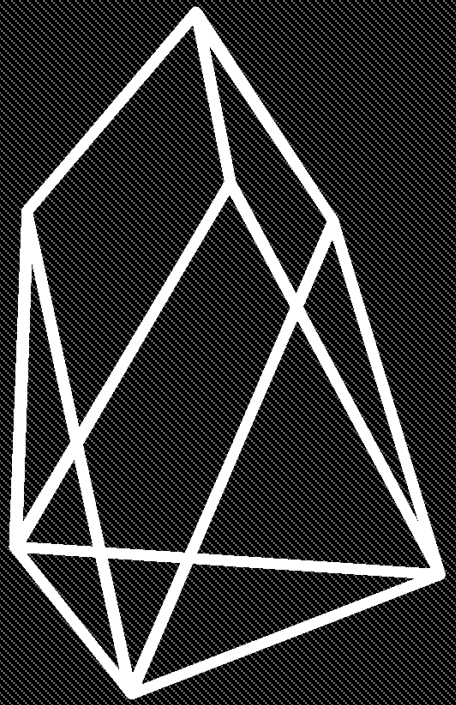

THANK YOU

ANY QUESTIONS?

Presented by

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