Bitcoin / Blockchain and Applications

High-level view

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Introduction

- Bitcoin is:
  - a decentralised digital currency
  - a peer to peer protocol
  - a distributed platform
  - a novel consensus mechanism
  - **… a technology**
- main application categories and examples of
  - bitcoin and blockchain applications
  - bitcoin enabled applications
  - some other blockchain applications
  - available now / available soon / will take some time
- too many to properly cover

Applications

- Remittances
- Payments
- Micropayments
- Bank services for the unbanked
- Store of Value
- Digital Tokens
- Decentralized Applications
- Proof of Existence
- Smart Contracts
- Other

Remittances

- €600 billion market
  - Western Union (15%)
  - MoneyGram
- High fees
  - depends on location
  - up to 25%
  - more for same day delivery
- Up to same day delivery
- Anywhere there is an agent
- Working hours
  - plus extended hours

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- Bitcoin slowly gains momentum
- ~4¢ irrespective of amount
  - 1BTC = €352
- Up to an hour
  - in practice it is much faster
- Anywhere there is a connected machine
  - Internet (no need for permanent access)
- Anytime
  - 24/7
- No intermediaries, but…
  - bitspark.io
  - rebit.ph
  - bitpesa.co

Making/Receiving Payments

- Online
- Credit cards
  - 3%-6% + small flat rate
- Debit cards
  - 2%-3% + small flat rate
- Paypal
  - 2.9% + $0.30
- Bitcoin
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- Payment Processing?
  - Coinbase, BitPay

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- Some major companies
  - Overstock
  - Microsoft
  - Dell
  - Expedia
  - Time Inc.
  - DISH Network
  - Newegg
  - Zynga
  - UK's Theatre Tickets Direct
  - AirBaltic
  - CheepAir
  - …
- Do they keep their bitcoins?
- Can Bitcoin handle demand if widely adopted?

Micropayments

- Pay content creators
  - media
  - blogs
  - forums
- Many failed
- Flattr
  - click to reward
  - 10% fee from receivers
- ChangeTip
  - Twitter, Reddit, YouTube, Google+, Tumblr, StockTwits
  - was 1%, for now none
- ProTip (Chrome extension)
  - open source
  - free
- Zapchain

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- Pay as you go (by the second!)
  - content distribution
    - watchmybit.com
    - streamium.io
    - Netflix-like service?
  - wifi
    - BitMesh (company)
    - Wifiportal21 (open source)
  - other
    - web hosting
    - …

(payment channels: trustless, 2-2 multi-sig, nLockTime)

Be your own bank

- Bank services for the unbanked
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  - micro-payments / donations
  - … using Mobiles

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- Store of value
  - gold
  - reserve currencies
  - bitcoin
    - deflationary
    - Latin/South America, China, Russia.

Digital Tokens

- represent/transfer real world value/asset
  - theater tickets
  - consultancy hours (Kostas-1Hour)
  - authentication mechanism
  - stock markets' shares
  - new currency
  - car ownership/key, house deeds, …
- Blockchain metadata (OP_RETURN)
- Colored Coins protocol (e.g. Open Assets)
  - using Bitcoin's Blockchain
- CounterParty tokens
  - abstract layer on top of Bitcoin
- Other: Ethereum, NXT, BitShares, ...
- Special wallet is required

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- LetsTalkBitcoin.com
  - LTBC token
  - Proof of Participation
  - token-based access
- GetGems
  - GEMZ token
  - Social media rewards platform
- StorJ
  - SJCX token
  - Decentralized Cloud Storage
  - more later
- FoldingCoin
  - FLDC token
  - "Mine" to help scientist cure diseases
- BitCrystals - Spells of Genesis
  - BCY token

Decentralized (P2P) Applications

- LightHouse
  - open source
  - decentralized peer to peer crowdfunding
- OpenBazaar
  - open source
  - decentralized e-commerce marketplace
  - no intermediaries - no fees
  - trusted arbiters / escrow
- StorJ
  - open source
  - decentralized Cloud Storage
  - sell storage / rent storage
  - private, secure and encrypted
  - fault tolerant and highly redundant

- Decentralized DNS
  - Namecoin (merge mined with Bitcoin)
  - Domain Name registry
  - .bit
- Decentralized Stock Exchange
  - Medici (t0.com)
  - Symbiont
- Decentralized versions of social media
  - Twitter-like?
  - Reddit-like?

Proof of Existence

- Blockchain
  - immutable public database
  - can add but never remove or change
  - trusted timestamping
- Hash of data -> timestamp -> blockchain
- Why?
  - statements (e.g. predictions)
  - company processes
  - audits
  - …

- Factom
  - open source
  - decentralized protocol to add / check immutable entries in Bitcoin
- Others
  - proofofexistence.com
  - blocksign.com
  - bitproof.io
  - stampery.com
  - blocknotary.com
  - tierion.com
  - stampd.io
  - …

"Smart" Contracts

- agreements enforced by algorithms
- examples
  - escrow and dispute mediation
  - micropayment channels
  - assurance contracts (crowdsourcing)
  - auctions
  - ...
  - prediction markets

- Bitcoin
- Ethereum
- ...

- Prediction markets
  - wisdom of the crowd
  - prediction makers & oracles/reporters
  - facts database
  - examples
    - Hivemind
    - Augur

Other

- Decentralized Autonomous Corporations

- Internet of Things / M2M

- Voting / Identity

- Private Blockchains

Questions?

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