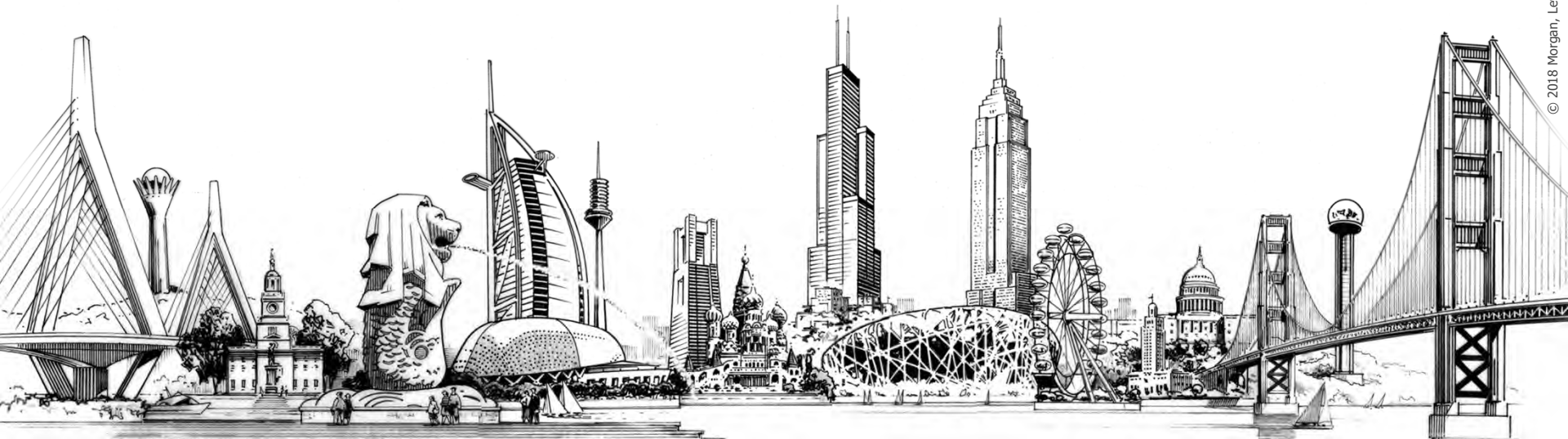# Morgan Lewis

BITCOIN 2.0 – NEW TECHNOLOGIES AND NEW LEGAL IMPACTS

Jacob Minne – Morgan, Lewis & Bockius LLP

Rakesh Ramde – Proteum Capital, LLC

October 16, 2018

Agenda

- Introduction - A Brief Refresher on Bitcoin
- Second Layer Solutions:
  - Lightning Network
  - Applicability of AML Laws
  - Extraterritoriality
  - Taxation
  - Potential Strategies
- Digital Governance Strategies
  - Dash – Taxing and Spending
  - Ethereum and the DAO
  - EOS – On-Chain Dispute Ressolution
- Business Assets on the Blockchain
  - *Rakesh Ramde, Proteum Capital, LLC*

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INTRODUCTION AND REFRESHER ON BLOCKCHAIN

A Blockchain Is:

1. A database,

2. that is distributed (not centralized),

3. whose data elements are immutable (unalterable), and

4. that is encrypted

"At its simplest level, a blockchain is nothing much more than a fancy kind of database"

- Blythe Masters, Digital Assets

Bitcoin Distributed Payment System

- All participants (A-I) have sight of all transactions on the blockchain (and their entire history)

- Payments pass <u>directly</u> between users, here A to F, but are verified by other users (here, D, G, and I)

- New transactions are broadcast to "miners"

- When verified, the transaction is added to the blockchain history
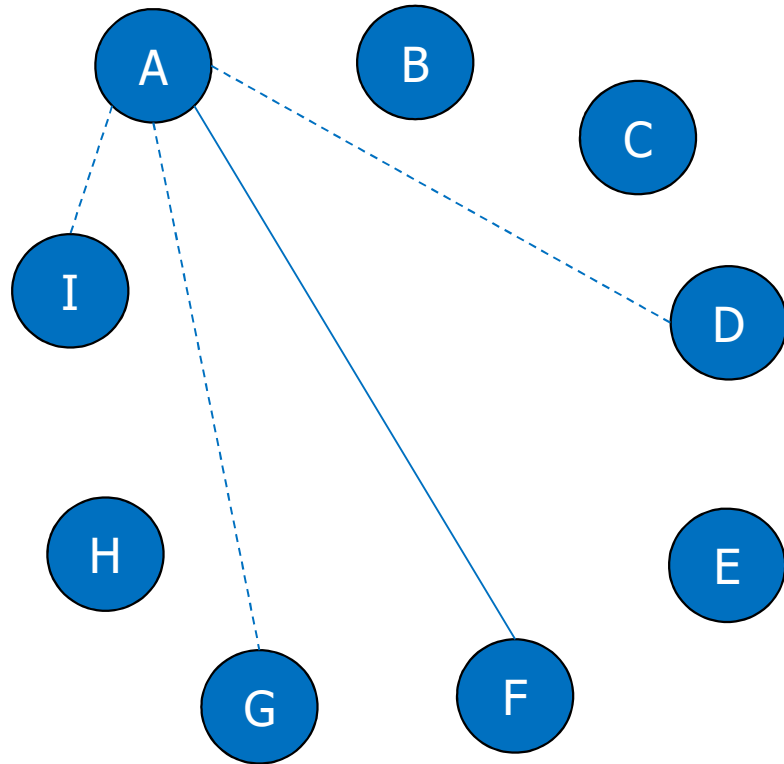
(Bank of England Quarterly Bulletin 2014 Q3)

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Advantages and Disadvantages

Advantages:
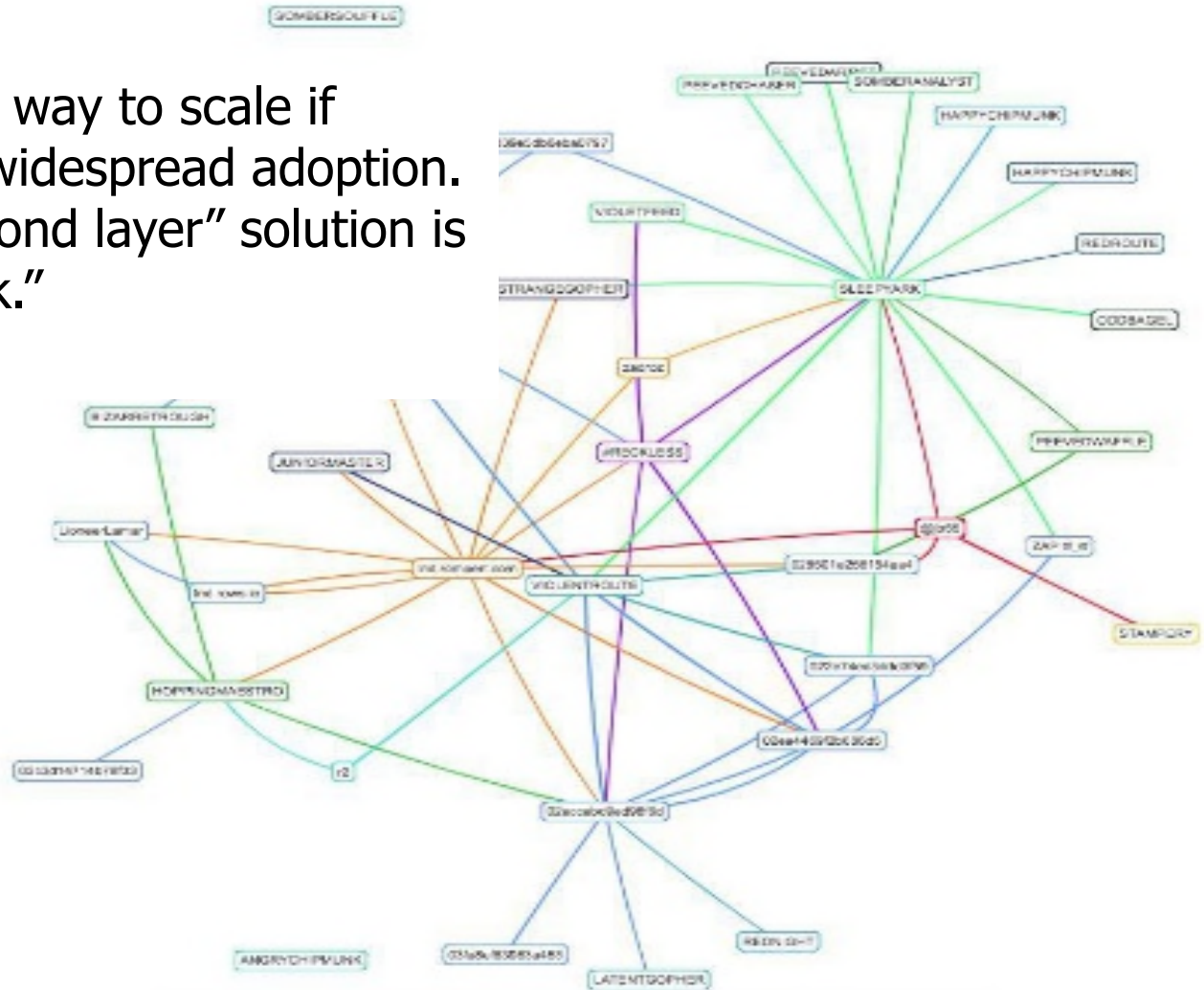
• Accessibility

• Redundancy

• Passive access

Disadvantages:

• Slow transaction rate / (potentially) high cost

• High Energy Cost

• Lack of Privacy

SECOND LAYER SOLUTIONS – A DISCUSSION OF LIGHTNING NETWORK

Second Layer Solutions

- Developers need a way to scale if Bitcoin is to have widespread adoption. One so-called "second layer" solution is "Lightning Network."
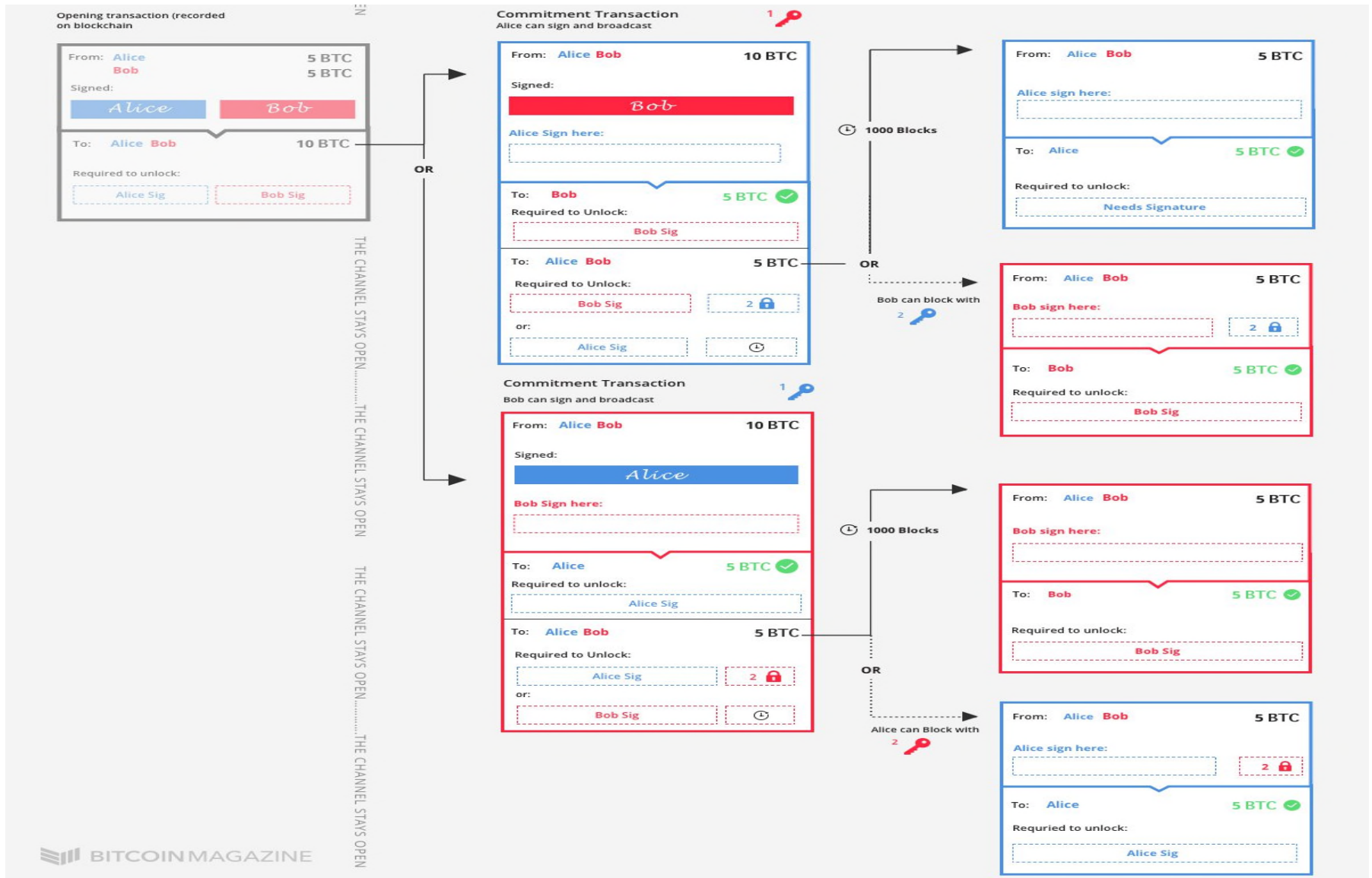
Lightning Network

- In Lightning, two peers make a single transaction on the blockchain, each locking some amount of bitcoin in a "channel."

- The two parties can then trade back and forth so long as the net balance never exceeds the channel balance.

- Any node can forward a payment to another one of its "peers" on the Lightning Network, and may take a small fee for doing so.

Pros	Cons
Increased Privacy	Requires Internet Connectivity and monitoring
Ability to Earn Revenue on Liquidity Services	Ongoing technical challenges in routing
Fewer on-chain transactions	Some negative community sentiment

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Lightning Network – Explanation
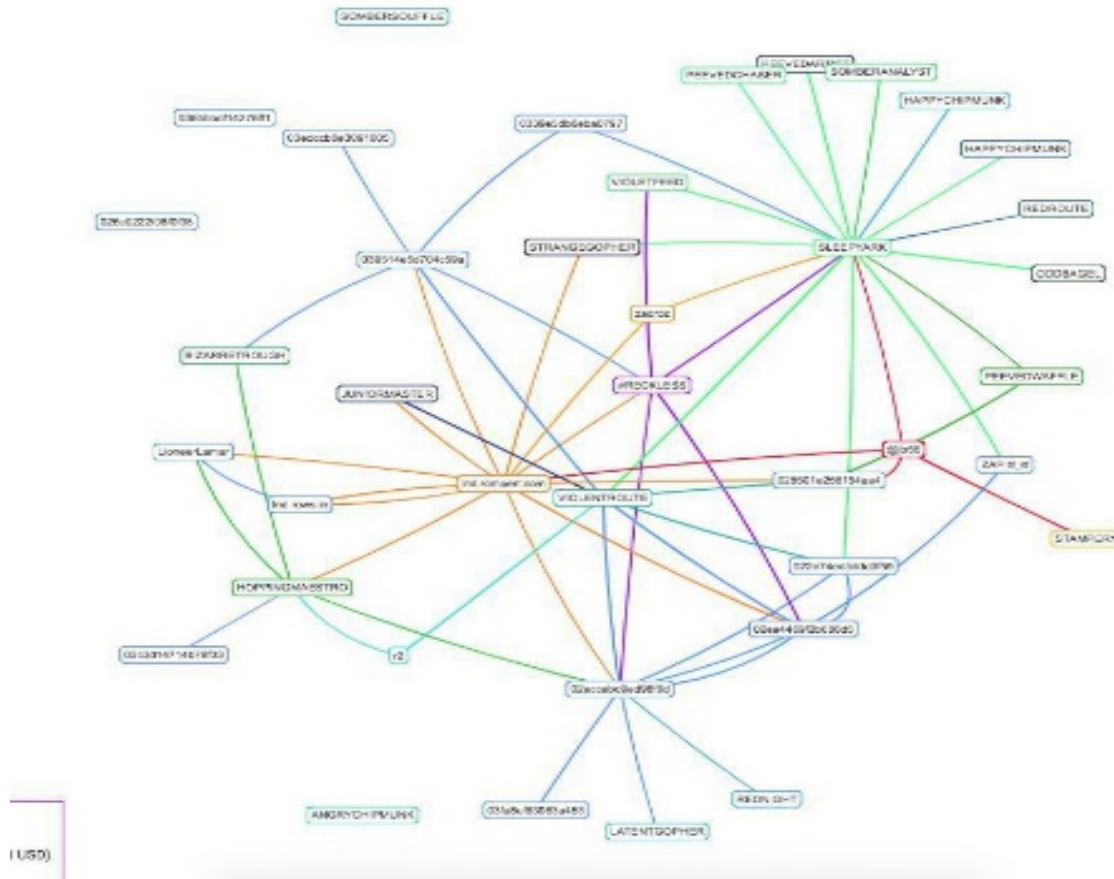
How Will FinCEN Regulate Nodes?

- FinCEN Definition of "Money Service Business"

(ff) ***Money services business.*** A person wherever located doing business, whether or not on a regular basis or as an organized or licensed business concern, wholly or in substantial part within the United States, in one or more of the capacities listed in paragraphs (ff)(1) through (ff)(7) of this section. This includes but is not limited to maintenance of any agent, agency, branch, or office within the United States.

(5)(i)(A) A person that provides money transmission services. The term "money transmission services" means the acceptance of currency, funds, or other value that substitutes for currency from one person *and* the transmission of currency, funds, or other value that substitutes for currency to another location or person by any means.

31 CFR 1010.100

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How Will FinCEN Regulate Nodes?

- FinCEN offered **narrow** guidance on why miners would not be subject to AML/KYC regulations:
  - FinCEN understands that Bitcoin mining **imposes no obligations on a Bitcoin user to send mined Bitcoin to any other person** or place for the benefit of another. Instead, the user is free to use the mined virtual currency or its equivalent for the user's own purposes, such as to purchase real or virtual goods and services for the user's own use. To the extent that a user mines Bitcoin and **uses the Bitcoin solely for the user's own purposes and not for the benefit of another, the user is *not* an MSB under FinCEN's regulations, because these activities involve neither "acceptance" nor "transmission" of the convertible virtual currency and are not the transmission of funds within the meaning of the Rule.**

- Similar guidance For application developers
- https://www.fincen.gov/resources/statutes-regulations/administrative-rulings/application-fincens-regulations-virtual-0

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Problems for Nodes

- To operate a node, you have to hold bitcoin as value not only for yourself, but also as liquidity for your partners on the network.

- FinCEN has enforced AML laws against both blockchain developers and exchanges:
  - Ripple: after the 2013/2014 guidance, failed to register with FinCEN as an MSB, didn't comply with KYC laws, no internal controls under the BSA. **$700,000 fine.**
  - BTCe: Operated an exchange overseas that bragged about becoming a haven for illegal activity. Only required an email address to sign up. **$110,003,314 Fine.**

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Potential Solutions

- <u>Don't Participate:</u>
  - Andreas Antonopoulos stated on "Let's Talk Bitcoin" that companies like Coinbase will never support Lightning Network:

> **"They have a fully KYC/AML-ed customer on one end of their connection, but if they receive a payment that's going to that customer over the Lightning Network, they have no idea whether that customer's the final destination… If they receive one coming in from that customer, they have no idea if that customer's the origin… Which means their KYC just fell apart – completely fell apart."**

https://bitcoinist.com/coinbase-exchanges-wont-run-lightning-antonopoulos/

This may be pessimistic.

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Potential Solutions

- Hub-and-Spoke "walled garden" model with AML Compliance:
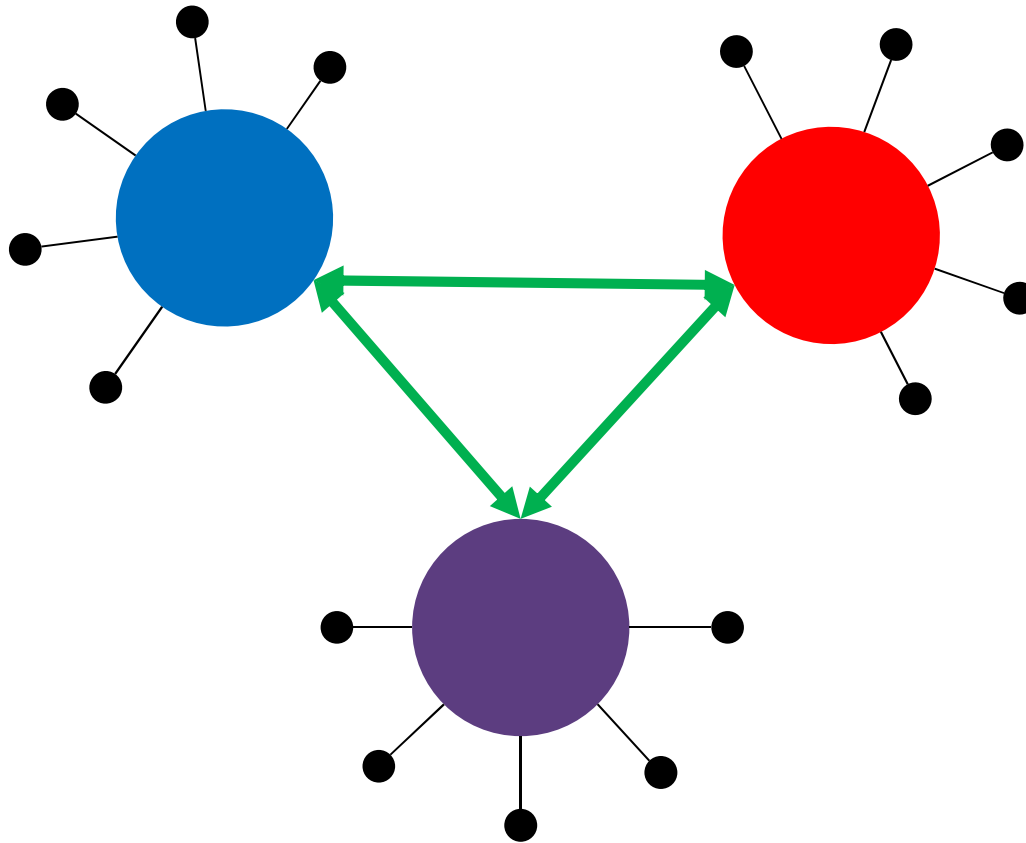
Potential Solutions

- Use the exceptions to Section (ff)(5)(i): "Whether a person is a money transmitter as described in this section is a matter of facts and circumstances. The term "money transmitter" shall not include a person that only:

    (A) Provides the delivery, communication, or **network access services** used by a money transmitter to support money transmission services;

    (B) Acts as a **payment processor** to facilitate the purchase of, or payment of a bill for, a good or service through a clearance and settlement system by agreement with the creditor or seller;

    (C) Operates a **clearance and settlement system or otherwise acts as an intermediary solely between BSA regulated institutions**. …;

    (D) ["Physically transports currency…"]

    (E) Provides **prepaid access**; or

    (F) Accepts and transmits funds only integral to the sale of goods or the provision of services, other than money transmission services, by the person who is accepting and transmitting the funds.

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Potential Solutions

- Non-US Company? Not so fast...
  - A company qualifies as a US MSB if it does business as an MSB "wholly or in substantial part within the United States." (BTCe Decision, 31 U.S.C. 5312, 5330)
  - As to BTCe "Customers located within the United States used BTC-e to conduct at least 21,000 bitcoin transactions worth over $296,000,000"

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Potential Solutions

- Cryptoanarchy!
  - MSB requirements only apply to a person engaged in "business" – to the extent liquidity is being provided outside of the pursuit of a business purpose, there would be a deficiency in the government's *prima facie* case.

  - (probably the least likely solution)

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Taxation Concerns

- Lightning Network Allows For "Atomic Swaps"

- Issue
  - Atomic swaps allow platformless conversion of different types of cryptocurrecies
  - The IRS believes each conversion is a taxable event.

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Other Second Layer Solutions

- Plasma Chains

- Node-based mining

- Proof of Stake (not necessarily Second Layer)

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DIGITAL GOVERNANCE

Ethereum and the DAO

- A major "smart contract" was hacked.

- The community ***changed the rules of the blockchain***

- This caused a fork – "Ethereum" and "Ethereum Classic"

Ethereum Analysis:

- Who is liable?
  - Creators of the DAO?
  - Ethereum Foundation?
  - What about the Hackers?

- Probably OK here, what about in other cases?
  - To defeat a malicious user/node?
  - By a malicious user/node?
  - Because the devs don't like someone?

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Dash – A System For Community Funding

- Community can "vote" on changes

- A portion of each transaction fee goes to a governance body, this money can be "assigned" to various causes sponsored and voted on by the community.

- Only users with 1000 Dash can vote (though users can combine funds).

- Few Users Vote

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Dash Analysis

- Joint Liability for Illegal Acts Funded By Dash?

- To prove that the defendant is guilty of a crime based on aiding and abetting that crime, the People must prove that:

  – 1. The perpetrator committed the crime;

  – 2. The defendant knew that the perpetrator intended to commit the crime;

  – 3. Before or during the commission of the crime, the defendant intended to aid and abet the perpetrator in committing the crime; AND

  – 4. The defendant's words or conduct did in fact aid and abet the perpetrator's commission of the crime.

  Cal. Jury Instruction 401

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EOS

- The Designers Originally Instituted a Constitution and required Nodes to agree to abide by it.

- According to the whitepaper "Every transaction broadcast on the network must incorporate the hash of the constitution as part of the signature and thereby explicitly binds the signer to the contract." https://github.com/EOSIO/Documentation/blob/master/TechnicalWhitePaper.md#constitution

The EOS Constitution

- -# Article I - No Initiation of Violence -Members shall not initiate violence or the threat of violence against another Member.

- -# Article II - No Perjury -Members shall be liable for losses caused by false or misleading attestations and shall forfeit any profit gained thereby.

- …

- -# Article IV - No Vote Buying -No Member shall offer nor accept anything of value in exchange for a vote of any type, nor shall any Member unduly influence the vote of another.

- -# Article V - No Fiduciary -No Member nor SYS token holder shall have fiduciary responsibility to support the value of the SYS token. The Members do not authorize anyone to hold assets, borrow, nor contract on behalf of SYS token holders collectively. This blockchain has no owners, managers or fiduciaries; therefore, no Member shall have beneficial interest in more than 10% of the SYS token supply.

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The EOS Constitution

- -# Article VII - Open Source -Each Member who makes available a smart contract on this blockchain shall be a Developer. Each Developer shall offer their smart contracts via a free and open source license, and each smart contract shall be documented with a Ricardian Contract stating the intent of all parties and naming the Arbitration Forum that will resolve disputes arising from that contract.

- ...

- -# Article IX - Dispute Resolution -All disputes arising out of or in connection with this Constitution shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with the said Rules.

- -# Article X - Choice of Law -Choice of law for disputes shall be, in order of precedence, this Constitution and the Maxims of Equity.

- -# Article XI - Amending -This Constitution and its subordinate documents shall not be amended except by a vote of the token holders with no less than 15% vote participation among tokens and no fewer than 10% more Yes than No votes, sustained for 30 continuous days within a 120 day period.

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The EOS Constitution

- ...

- -# Article XV - Termination of Agreement -A Member is automatically released from all revocable obligations under this Constitution 3 years after the last transaction signed by that Member is incorporated into the blockchain. After 3 years of inactivity an account may be put up for auction and the proceeds distributed to all Members according to the system contract provisions then in effect for such redistribution.

- -# Article XVI - Developer Liability -Members agree to hold software developers harmless for unintentional mistakes made in the expression of contractual intent, whether or not said mistakes were due to actual or perceived negligence.

- https://github.com/EOSIO/eos/blob/5068823fbc8a8f7d29733309c0496438c339f7dc/constitution.md

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The EOS Constitution

- Unfortunately, block producers have been reticent to enforce decisions claimed to have been made by the ECAF

- There is currently an effort to amend and ratify an new constitution.

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BUSINESS ASSETS AND BLOCKCHAIN

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Why use Blockchain?

Marc Andreessen
Co-Founder, Andreessen Horowitz

"The practical consequence [...is...] for the first time, a way for one Internet user to transfer a unique piece of digital property to another Internet user, such that the transfer is guaranteed to be safe and secure, everyone knows that the transfer has taken place, and nobody can challenge the legitimacy of the transfer. The consequences of this breakthrough are hard to overstate."

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Singapore Airlines to Launch Blockchain-Based Loyalty Wallet

Reality: KrisPay, in production since July 2018

Source: Coindesk

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Many Use Cases for Business in Blockchain Supply Chain

Logistics

Contract Management

Transfer and Recording Of Ownership and Security

Tracking

Auditing

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Boeing on the Blockchain

With blockchain, Boeing holds complete provenance details of each component part. This information is then accessible by each manufacturer in the production process, the aircraft owners and maintainers, and government regulators.

With complete provenance and IoT, operations will be able to:

- Predict maintenance events
- Optimize production operations
- Extend the life cycle of components
- Customize maintenance for components

As far as data generation goes, Boeing planes already generate a huge amount of data as John explains. "The Boeing 787 generates one half terabyte of data for each flight. You can see online how many 787s are in flight," said John. "Using 200 as a number of active flights, that's 100 terabytes of data for each of the flights. These aircraft fly two to three flights a day. That's over a petabyte a week for those 787 aircraft."

With an IoT-driven blockchain holding all the information, the opportunity for customer transparency is there. "Informed passengers will be the biggest business opportunity," said Robert. "IoT brings transparency of service. Individuals will have greater selection of services and be responsive to alternatives in opportunities and avoidance of disruption."

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Asset Types

Fungible

Oil
Wheat
Gold
Stocks

e.g. Ethereum Standard:
ERC-20 or ERC-223

Unique Assets

Housing/Land
Commercial Real Estate
Art
Service Contracts
Stocks

e.g. Ethereum Standard:
ERC-721

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Presentation Disclaimer

In the interest of time, this presentation will not cover:

AML/KYC/SEC/Exchanges/Tax/Utility vs Security/ICO/ FinCEN/CFTC/Pre-Sale/State Laws/Secondary Trading

Jurisdiction

Where is the asset?

Where are the buyers and sellers located?

What laws do you apply? (Tax, contract, fraud, regulatory, privacy, title, recording, public policy etc.)

Who has jurisdiction over a decentralized environment such as a global network?

What jurisdiction governs if blockchain is global?

Smart Contracts

- Code-based algorithms are automatically executed upon meeting certain specified criteria coded into the smart contract
- Exception events: *Can real-world events be captured in code* ?
  - Stolen/Damaged Property
  - Superseding the Smart Contract
  - Public Policy – e.g., Bankruptcy, Landlord-Tenant Eviction Statues
- How do you handle dispute resolution?
- Is there a trusted entity? What parties are you dealing with?

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March 2018

FM Home > CryptoCurrency > News > Credit Suisse and ING Group Transfer Securities Worth €25m

Credit Suisse and ING Group Transfer Securities Worth €25m via Blockchain

A new type of account was used to make the transfer instantaneous.

Reality: Tokenize. Digitize. Trade. R3 Corda Platform

Source: Finance Magnates

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Service and Performance Levels

Which Blockchain or Platform is right for you?

- Public vs Private Blockchain
- Is there a trusted entity?

Governance

Is your business relying on third party vendor technology?

- Security
- Scalability

- Reliability and Availability
- Accessibility

- Are services part of your business?

Standard technology issues still need to be considered.

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Liability and Technical Vulnerabilities

- DAO (Distributed Autonomous Organization)
- What happens if the system malfunctions?
- Who will be responsible for security, uptime and accessibility?
- Who controls the functioning of the platform?
- Hot Wallet vs Cold Storage
- Insurance

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Data Privacy and GDPR

- Does the blockchain hold personal data?

- Which data protection laws will apply?

- Data Protection Act – need consent from individuals concerned?

- "Right to be Forgotten"

- Security breaches

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Intellectual Property

- Commercialization of the underlying data set in the blockchain
- Who owns the data in the blockchain?
- Patents (Hedera)

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Litigation and Dispute Resolution

- Which laws and which forum will be used to resolve disputes?
- Subpoenas, Discovery and Investigations
- Is it reversible even in court?
- Mismatch with the UCC

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Key Take Aways

How is **trust** ensured and maintained in a decentralized system?

Think about the **type of assets, services or rights** that will be on the blockchain.

What are the related **business processes** that are impacted or uniquely enabled?

Understand **technical trade-offs**
    Which coin? Which platform?
    Scalability, security, reliability
    Off-chain vs On-chain

Legal reform is on-going.

Simply, all business, technical, and legal aspects must be constantly evaluated.

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Thank you!

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This presentation is downloadable at:

https://hubs.ly/H0f6r740

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QUESTIONS?

Biography
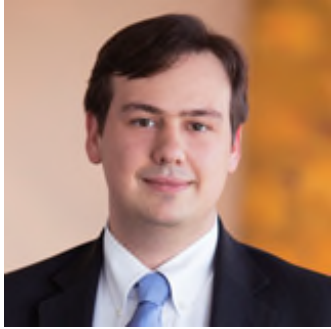
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Jacob Minne advises clients on patent, trademark, copyright, and trade secret litigation, as well as related antitrust matters. His litigation experience includes cases for clients in a diverse range of technology fields such as semiconductor chip manufacturing methods, medical devices, and mobile software. He has experience in forums including the US District Court for the Central District of California, the US Court of Appeals for the Federal Circuit, and the US International Trade Commission (USITC).

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Serving as the leader of Morgan Lewis's semiconductor practice, Andrew J. Gray IV concentrates his practice on intellectual property (IP) litigation and prosecution and on strategic IP counseling. Andrew advises both established companies and startups on computer and Internet law issues, financing and transactional matters that involve technology firms, and the sale and licensing of technology. He represents clients in patent, trademark, copyright, and trade secret cases before state and federal trial and appellate courts throughout the United States, and before the US International Trade Commission.

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Our Global Reach

Africa
Asia Pacific
Europe
Latin America
Middle East
North America

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