

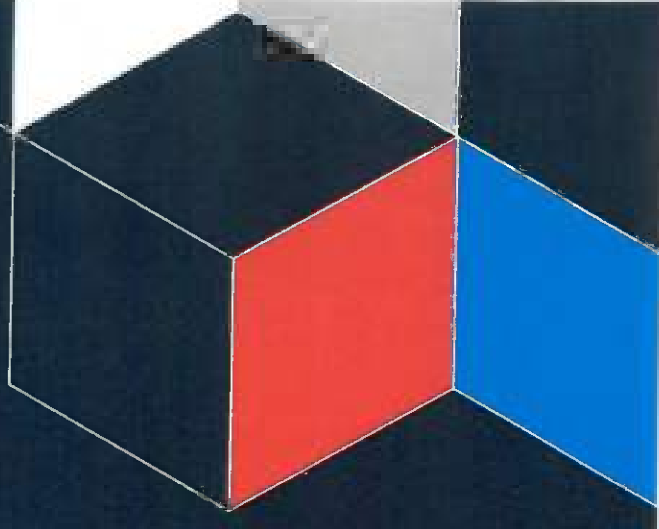
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**Blockchain Technology and the
Financial System:
Legal and Regulatory Issues**

Presentation to the Financial Markets Lawyers Group

April 7, 2016

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Review of Essentials of the Blockchain

- Bitcoin and blockchain
- Bitcoin blockchain vs. other forms of distributed ledger technology
 - Scalability
 - Mining
 - Compensation

Current Commercial Developments



Digital Asset Holdings

- March 29, 2016: DTCC and Digital Asset Holdings announced they will create a “proof of concept” for a blockchain that would facilitate clearing and settlement of repo trades



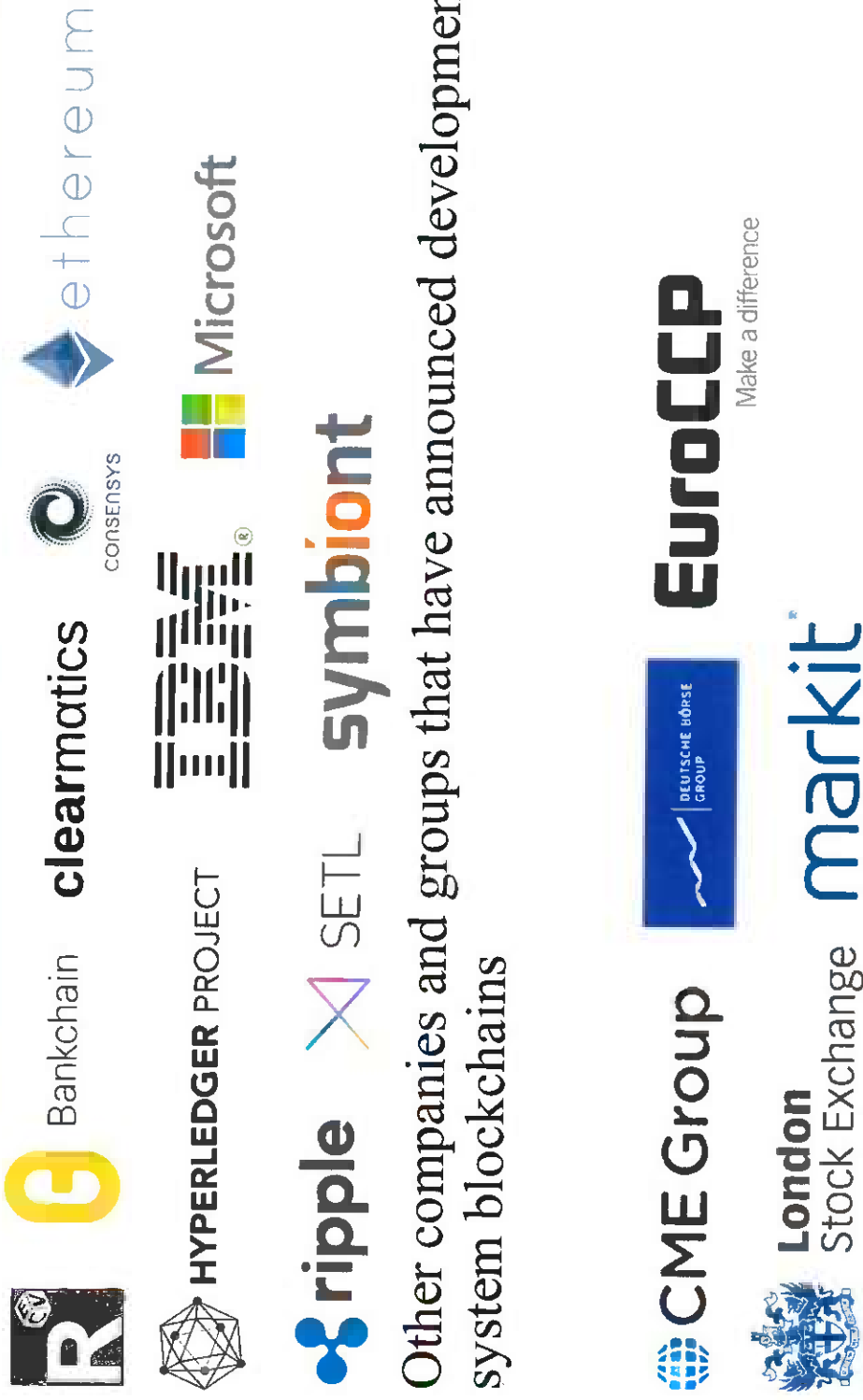
ASX



Digital Asset Holdings

- January 22, 2016: ASX announced it selected Digital Asset Holdings to create a blockchain for clearing and settlement of cash equities

Current Commercial Developments



- Other companies and groups that have announced development of financial system blockchains
- Other financial market intermediaries that have announced that they are exploring blockchain solutions

Current Commercial Issues

- Public (unpermissioned, trustless) blockchain vs. private (permissioned, trusted) blockchain
- “Ground up” building vs. integration with existing systems
- Interoperability of blockchains
- “Chicken and egg” problem: Capital expenditures and regulatory approval
- Latency and energy efficiency
- Settlement Time: Is instantaneous settlement desirable in all cases?
- Desirability of CCPs if settlement and clearing is automated on blockchain

Current Legal Issues

- “Smart contract” technology
 - Digital transactions
 - Self-executing
 - Recording
 - Settlement
 - Exchange of payments
 - Margin
 - Terms
- Dispute resolution
 - Countervailing transactions
- Intellectual property
 - Open-source?
 - Licensing or owning?
- Consolidation

Current Regulatory Issues

- “Chicken and egg” problem: Capital expenditures and regulatory approval
 - March 2016 OCC paper on Supporting Responsible Innovation in the Federal Banking System
 - February 23, 2016 CFTC Technology Advisory Committee meeting on the blockchain and the potential application of distributed ledger technology to the derivatives market
- AML/BSA/KYC
 - Pseudonymity
 - Transparency
 - To participants
 - To regulatory authorities
- Ability to correct transactions and smart contract data
 - Process for resolving disputes

Current Regulatory Issues

- Privacy
 - Transborder data flow
 - Partitioned ledgers
- Cybersecurity
- State licensing
 - Full faith and credit
 - State vs. federal jurisdiction
- Recordkeeping regulations
- Dodd-Frank Act Title VII
- CCPs under Dodd-Frank Act Title VIII



Regulatory Issues: Recent Developments

- March 2016: OCC paper on Supporting Responsible Innovation in the Federal Banking System
- February 2016: IOSCO Board discussion of blockchain: Board “agreed on further research” regarding opportunities and risks
- February 23, 2016: CFTC Technology Advisory Committee meeting on the blockchain and the potential application of distributed ledger technology to the derivatives market
- February 22, 2016: FSB letter to G20 Finance Ministers and Central Bank Governors on its evaluation of “financial technology innovation” and desire to “manage any systemic risks ... without stifling innovation”
- February 22, 2016: FCA, during London Fintech Week, statement that it is monitoring blockchain and that the technology needs “space” to grow



Regulatory Issues: Recent Developments

- January 2016: DTCC white paper on potential of blockchain technology
- November 9, 2016: New York State Department of Financial Services letter to financial regulatory authorities concerning potential new cybersecurity regulations
- CFTC Enforcement Actions
 - September 17, 2015: Coinflip order (Virtual currencies are commodities)
 - September 24, 2015: Tera order (CEA applies to bitcoin swaps)
- June 3, 2015: New York State Department of Financial Services issuance of “BitLicense” framework for regulating virtual currency activity



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