Digital Currency, Blockchains, and the Future of the Financial Services Industry

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KMC 2-60, 44 West 4th Street
Mondays & Wednesdays, 10:30 a.m.– 11:50 a.m.
Fall 2019

Course overview
Bloomberg summarized a research report issued by McKinsey & Co:

Firing people won’t be enough to save the world’s biggest banks from technological and regulatory changes that have reshaped the industry - whole businesses must go, according to McKinsey & Co. Almost every bank will have to quash aspirations to be all things to all customers . . . Only three to five global full-service banks will survive, McKinsey said.

This course covers digital currencies, blockchains, and related topics in the FinTech area, perhaps the most significant innovation in the financial world since the advent of double-entry bookkeeping centuries ago. The technology appears to represent an existential challenge for major parts of the finance industry. It is now commonly suggested by experts such as McKinsey that commercial banks and stock exchanges may no longer exist, or may become much smaller, within the next 10 to 20 years, with increasing volumes of payments and exchange taking place on a peer to peer basis.

We will begin with a study of the nature of money and legacy payment and banking systems. We will then study the emergence of stateless, cloud-based digital currency systems since 2009. Further lectures will explore threats that blockchain technology poses to incumbent firms and their resulting attempts to co-opt the technology into existing business models. We will explore the evolving responses by regulators to the challenges created by this technology, including the initial coin offering phenomenon, and international efforts to stymie money laundering and funding of undesirables using these new technologies. We survey related issues including hacking, smart contracts, governance, and emerging regulation.

Learning Outcomes: The goal of this course is to equip the students to better understand the law and business of blockchain technology, both in its initial application in the digital currency Bitcoin, as well as in the applications currently being explored for a wide variety of uses and functions. The course is also intended to create a bridge between law students and business students that will enhance the quality of their communications after they enter into their careers.
Course organization
The course meets twice a week for lectures, Mondays and Wednesdays from 10:30 a.m.–11:50 a.m. The course will feature a number of guest speakers from industry and government.

We will meet on class days that overlap the academic calendars of both schools, which are offset by two weeks during the Spring 2019 semester. Therefore, the first class meeting will be Wednesday, September 4, and the final class meeting will be Wednesday, December 9.

All class meetings will be recorded for later viewing. Links to recordings will be posted on the NYU Classes website. Law School students will need to activate their Stern login credentials to access these videos. The activation can be done at: http://start.stern.nyu.edu.

Readings
Many readings for the course will be posted in .pdf or .ppt format on NYU Classes, or will be available through Internet links included in the syllabus below. The syllabus may be updated several times during the semester to reflect the availability of new readings or guest speakers.

We will also use two textbooks:


- Narayanan et al., *Bitcoin and Cryptocurrency Technologies* (2016). This book, a companion to Princeton University’s Coursera open on-line course in digital currency, is available for purchase, but a full pre-publication draft can be downloaded at no cost.

Note that due to the fast-changing nature of the subject matter, material in all of these books may already appear to be out of date.

Students are encouraged to stay current on the topic by following recent developments. For daily breaking FinTech news, the authoritative source is the website Coindesk.

A succinct, non-technical and highly readable introduction to the field is Malekan, *The Story of the Blockchain* (2018).

Evaluation
Evaluation will be based on student papers or projects that will be due during the December exam period.
Lecture topics
An approximate list of the course’s lecture topics appears below. We may deviate from this schedule based upon factors including the pace of individual lectures and the availability of guest speakers. Additional readings may be supplied by guest speakers and posted on NYU Classes when they become available.

September 4    AH & DY    Introductory class

- The Economist, 2015, The Great Chain of Being Sure About Things
- Easterbrook, 1996, *Cyberspace and the Law of the Horse*, University of Chicago Legal Forum

September 9    DY    Bitcoin as a currency; other Altcoins


September 11    DY    Cryptocurrency as an investment

- Li, Shin & Wang, 2019, *Cryptocurrency Pump and Dump Schemes*.

September 16    AH    Tech building blocks

- Codd, 1970, *A Relational Model of Data for Large Shared Data Banks*
- *The TCP/IP Model and Protocol Suite Explained for Beginners*

September 18    AH    History of payment systems

- *Understanding Bitcoin*
- *Hepburn v. Griswold*, 75 U.S. 603 (1869)
- *Knox v. Lee*, 79 U.S. 457 (1871)
- *Who Is the FDIC?*
September 23       DY       How Bitcoin and cryptocurrencies work, part 1

- Burniske & Tatar, Ch. 1-3.

- Optional: For a possible narrative of the mysterious circumstances surrounding the creation of Bitcoin, visit http://vu.hn/bitcoin%20origins.html and see the discussion at https://blocksplain.com/2018/02/15/satoshi-nakamoto-scronty/

September 25       DY       How Bitcoin and cryptocurrencies work, part 2

- Burniske & Tatar, Ch. 13.

September 30       NO CLASS

October 2          AH       Cryptoassets regulated as financial instruments

- Narayanan, et al. Ch. 5.
- Burniske & Tatar, Ch. 14.
- FIN-2013-G001
- FIN-2109-G001
- 18 USC 1960
- Bank Secrecy Act
- Testimony of Herbert A. Biern
- 5/14/19 Geographic Targeting Order
- State Regulations on Virtual Currency and Blockchain Technologies

October 7          AH       Blockchain tracing; AML/KYC  
                       Guest speaker: Jonathan Levin  
                       Co-founder, Chainalysis

- Segal, 2014, Eagle Scout. Idealist. Drug Trafficker?

October 9          NO CLASS

October 14         DY       Forks, code = law, and dispute resolution

- Narayanan et al, Ch. 4.
October 16  DY  Cryptocurrency investing  
*Guest speaker:* Barry Silbert  
Founder, Digital Currency Group

October 21  AH  Smart Contrats, Ethereum and TheDAO

- Szabo, 1996, *Formalizing and Securing Relationships on Public Networks*
- Chamber of Digital Commerce, 2016, *Smart Contracts – 12 Use Cases for Business & Beyond*
- *Ethereum Whitepaper*
- Leisig, 2017, *The Ether Thief*
- Hinkes, The Dao-n Side of theDao
- *Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO*

October 23  AH  Open source / governance

- Haque, Silva-Herzog, Plummer, Rosario, 2019, *Blockchain Development and Fiduciary Duty*
- *Key Standards for Financial Markets Infrastructure*
- *Remarks of Commissioner Brian Quintenz at the 38th Annual GITEX Technology Week Conference*
- *In the matter of Lansing Trade Group, LLC* (2018)

October 28  DY  Blockchains and the art market  
*Guest speaker:* Amy Whitaker  
NYU Steinhardt School
October 30

- Howell, Niessner & Yermack, 2019, *Initial Coin Offerings: Financing Growth with Cryptocurrency Token Sales*
- U.S. Securities and Exchange Commission, *An Introduction To The U.S. Securities And Exchange Commission – Rulemaking And Laws*
- Monegro, 2016, *Fat Protocols*
- American Bar Association, 2017, *What Constitutes a Security and Requirements Relating to the Offer and Sales of Securities and Exemptions From Registration Associated Therewith*
- Batiz-Benet, Clayburgh & Santori, 2017, *The SAFT Project: Toward a Compliant Token Sale Framework*

November 4

- *In re: Munchee*
- *SEC v. Centra Tech*
- *SEC v. Arise Bank*
- *SEC v. PlexCorps*
- *In re: Tomahawk Exploration LLC*
- *In re: Nextblock*
- *In re: Gladius Network*
- *In re: Khaled*
- *Private Placements 506(b)*
- *Private Placements 506(c)*
- *Private Placements 504*
- *Private Placements: Reg A*
- *Private Placements: Regulation Crowdfunding*

November 6

- Van Valkenburgh, 2018, *Framework for Securities Regulation of Cryptocurrencies*
- *Van Valkenburgh*
- *Chesterfield (Plastic)*
November 11  DY  Stable coins and central bank digital currency


November 13  DY  Cryptocurrency derivatives and the CFTC

Guest speaker: Tim McCourt
Managing Director, CME Group

November 18  AH  Securities and commodities marketplace regulation

- SEC v. KIK
- In re: Airfox
- In re: Paragon
- In re: Coburn
- In re: Tokenlot
- SEC v. Bitqyck
- In Re: ICO Ratings
- Massad, 2019, It’s Time to Strengthen the Regulation of Crypto-Assets
- Blockstack Offering Circular
- Pocketfull of Quarters, Inc.
- 17 CFR 242.301, “Requirements of an Alternative Trading System”
- U.S. Launches Criminal Probe into Bitcoin Price Manipulation
November 20    AH    State and Federal taxation of virtual currency assets

- Burniske & Tatar, Ch. 17, pp 274-277
- U.S. Internal Revenue Service, Notice 2014-21
- 17 CFR 242.301, “Requirements of an Alternative Trading System”
- Mahoney & Rautenberg, The Regulation of Trading Markets: a Survey and Evaluation
- Robinson & Schoenberg, 2018, U.S. Launches Criminal Probe into Bitcoin Price Manipulation
- Letter to IRS from Sen. Hatch, Congressman Brady, Congressman Buchanan, May 17, 2017
- Phillips, 2019, Virtual currency not FBAR reportable (at least for now)
- Virtual Value Tax Fairness Act (HR 3963)
- IRS Publication 544: Sales and Other Dispositions of Assets

November 25    DY    Blockchain capital market applications

- JPMorgan, 2018, Blockchain and the Decentralization Revolution

November 27    NO CLASS

December 2    AH    Layer 2 protocols

December 4    AH    State and Federal legislation:

Guest Speaker: Caitlin Long

- Virtual Value Tax Fairness Act (HR 3963)
- Token Taxonomy Act
- Long, What do Wyoming’s 13 New Crypto Laws Mean?
December 9  AH  Litigation and jurisdictional issues:

*Guest Speaker:* Max Raskin

- Raskin, 2015, *Realm of the Coin: Bitcoin and Civil Procedure*
- Bilbow, 2019, *High Court Tackles Bitcoin ‘Property’ First*

December 11  DY  Financial Inclusion

*Guest speaker:* Amit Sharma

- Founder & CEO, Finclusive Capital

- Scott, 2016, *How Can Cryptocurrency and Blockchain Technology Play a Role in Building Social and Solidarity Finance?*