2022 Annual Spring Meeting

The Basics of Blockchain and Its Effects on Your Next Restructure

Hosted by the Emerging Industries and Technologies & Financial Advisors and Investment Banking Committees

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Layer	Functional Aspects	Nonfunctional Aspects
Application	Deposit Money Withdraw Money Transfer Money Monitor account balance	The graphical interface looks easy to use Easy to use Transfer of funds is fast System has many participants
Implementation	??????????? Which Engine do I use to run system	Available 24/7 Fraud Resistant Maintain Integrity Ensure User Privacy

Centralized v. Distributed

Centralized   Distributed
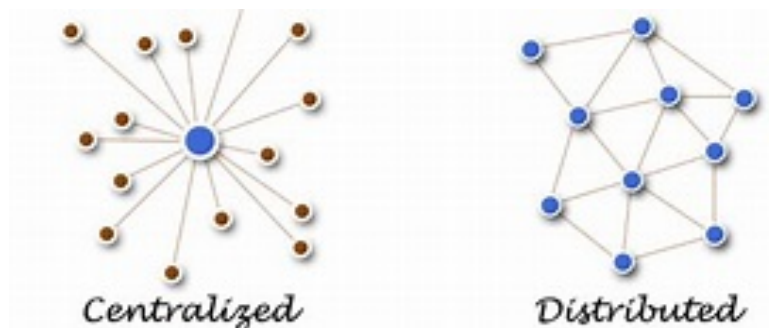
Blockchain

The purpose of the blockchain is to achieve and maintain integrity in distributed systems

How Peer to Peer Systems may change the world

- Peer to Peer systems are distributed software systems that consist of nodes (individual computers) which make their computational resources available to one another.
- Trust and Integrity in Peer to Peer Systems is Essential but can be difficult to achieve. The core problem that blockchain solves is achieving and maintaining integrity in a purely distributed peer to peer system that consists of an unknown number of peers with unknown reliability and trustworthiness.
- The excitement over blockchain is based on its ability to serve as a tool for achieving and maintaining integrity in purely distributed systems that have the potential to change whole industries due to disintermediation (cutting out the middleman)

Varying definitions of blockchain

- Blockchain can be defined in different ways: as a name for a data structure; as a name for an algorithm that organizes data structures, as a name for a suite of technologies; and as an umbrella term for purely distributed peer to peer systems with a common application area.

- The blockchain is a purely distributed peer to peer system of ledgers that utilizes a software unit that consist of an algorithm, which negotiates the informational content of ordered and connected blocks of data together with cryptographic and securities technologies in order to achieve and maintain its integrity.

- Notice that definition says nothing about Bitcoin or managing ownership of cryptographic money. While blockchain is very good at these functions, it has a wide and diverse range of applications.

- The reason why management and ownership of digital goods is the most discussed application is due to the fact that this use case has the largest impact on our economy.

Ownership and the Blockchain – the connection between trust and integrity and managing ownership

- Proof of Ownership
- Identification of Owners and Objects
- Mapping between Owners and Objects – Use of a ledger
    - 1 ledger is risky
    - Use of independent ledgers

- Creating multiple ledgers in a peer to peer system where blockchain algorithm is responsible for letting individual nodes collectively arrive at one consistent version of the state of ownership. Cryptography is used to implement identification, authentication and authorization.

- Integrity of a purely distributed peer to peer system of ledgers is found in its ability to make true statements about ownership and to ensure that only the lawful owner can transfer his or her property rights to others.

Double Spending

- Double Spending can refer to a problem caused by copying digital goods or a problem that may appear in a distributed peer to peer system of ledgers.
- The blockchain is a means to solve the double spending problem.

Cryptography - Public and Private Keys

- The major idea of cryptography is to protect data from being accessed by unauthorized people (digital equivalent to door locks or bank safes).
- Blockchain uses asymmetric cryptography in order to achieve two goals:
    - Identify accounts: User accounts are public cryptographic keys
    - Authorize Transactions: Owner of account who hands off ownership creates cypher text with private key. This piece of cypher text can be verified with corresponding public key, which happens to be the number of the account that hands off ownership.

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Cryptography - Public and Private Keys

- Digital Signatures in the blockchain fulfill the following requirements:
    - They state agreement of the owner of the account who hands off ownership with specific transaction data
    - They are unique for the whole content of the transaction data in order to prevent it from being used to authorize other transactions without the agreement of the author
    - Only the owner of the account who hands off ownership can create such a signature
    - They are easy to verify by anyone
- On the blockchain, the two use cases of digital signatures are to sign a transaction and verify a transaction

Smart Contracts – Basics

What is a smart contract?
- Smart contracts are stored on the blockchain.
- A smart contract is self-executing code that carries out a set of instructions, which are then verified on the blockchain platform.
- With a smart contract, the code defines the mechanisms of the transaction and is the final arbiter of the terms.
- Smart contracts are not necessarily automatically enforceable.

Key Characteristics

| Autonomous |
| Immutable |
| Self-Executing |
| Transparent |
| Secure |

Smart Contracts – The Underlying Technology

- There are several versions of blockchain software, but Ethereum is the main blockchain software used for smart contracts .
- Ethereum is an open-source, public, blockchain-based distributed computing platform and operating system.

Critical Ethereum Features

- Ability to perform computations within the blockchain
- "Oracles" – obtain external data from third parties and combine it with computer code within the blockchain to perform smart contract functions
- Decentralized Applications (dApps) run on top of the platform
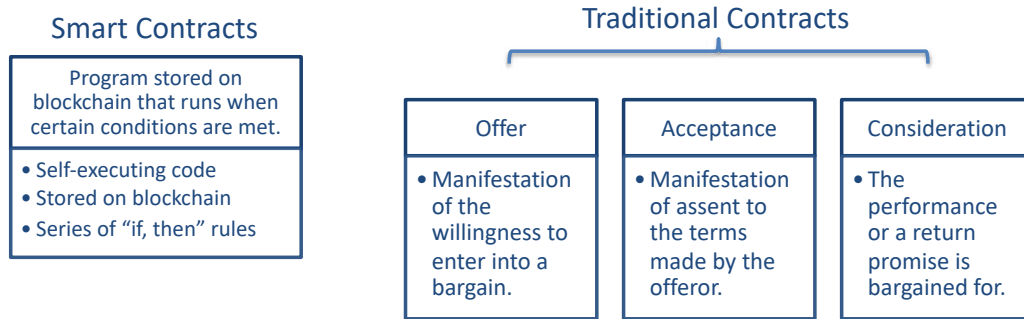

Smart Contract – Examples

Conceptual Vending Machine Example:

- To purchase a snack from a vending machine, certain conditions must be met: money must be inserted, and a selection must be made.
- If these conditions are met, the snack will automatically dispense.
- The cashier (i.e. a third-party intermediary) is not needed to complete the transaction.
- The logic programmed into the vending machine is the same logic behind smart contracts.

Differences between Smart Contracts & Traditional Contracts

Smart Contracts

Program stored on blockchain that runs when certain conditions are met.
• Self-executing code • Stored on blockchain • Series of "if, then" rules

Traditional Contracts

Offer	Acceptance	Consideration
• Manifestation of the willingness to enter into a bargain.	• Manifestation of assent to the terms made by the offeror.	• The performance or a return promise is bargained for.

Hybrid v. Standalone Smart Contracts

Best Practice: Hybrid Smart Contract

- Hybrid smart contracts are those linked to a traditional paper contract that references certain terms through a smart contract, but addresses certain issues in the traditional contract.
- Terms better addressed in the traditional contract include: choice of law provisions, jurisdiction and venue provisions, indemnification provisions, force majeure clauses, and alternate dispute resolution provisions.
- Using hybrid smart contracts post-petition may be efficient and effective.

Smart Contracts: Jurisdiction

Common Issues:

- The nodes/controllers in smart contracts are often located across multiple jurisdictions, as they can be based anywhere in the world. This means that without a choice of law provision, the transaction could fall under the jurisdiction of the location of every node in the network.

- <u>Practice point</u>: When creating smart contracts, the inclusion of choice of law, venue, and exclusive jurisdiction provisions are critical.

Interesting Cases:

- *Alibaba Group Holding Ltd. v. Alibabacoin Found.*, 18-CV-2897 (JPO), 2018 WL 5118638 (S.D.N.Y. Oct. 22, 2018)

- *SEC v. PlexCorps*, No. 17-cv-7007 (CBA) (RML), 2018 WL 4299983 (E.D.N.Y. Aug. 9, 2018)

- *Shaw v. Vircurex*, Civ. No. 18-cv-00067-PAD-SKC (D. Colo. Feb. 20, 2019)

Smart Contracts: Jurisdiction

In the absence of a choice of law provision, courts may consider:

- The parties' IP addresses;

- Where the contract was negotiated, coded, executed or performed;

- Prior agreements of the parties; and/or

- The domicile of the parties.

Establishing jurisdiction may prove difficult for courts:

- It is possible for parties to smart contracts to be anonymous.

- Public keys or pseudonymous identifiers on their own may not be enough for personal jurisdiction where the parties' identities are unknown.

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Smart Contracts & The Automatic Stay

- Smart contracts, which are automatic and self-executing, may inadvertently violate the automatic stay.
- The automatic stay prevents "any act to obtain possession of property of the estate or of property from the estate or to exercise control over property of the estate," as well as to "act to collect, assess, or recover a claim against the debtor that arose before the commencement of the case." 11 U.S.C. § 362(a)(3),(6).
- For example, a smart contract may be set up for monthly car payments. If the party does not pay for the month, that would trigger the car ceasing to function. If the payor were to file for bankruptcy, then the car ceasing to function would be considered controlling property of the estate in violation of the automatic stay.
- Practice Point: The parties could embed into the contract an **oracle** to a litigation alert system, such as Pacer, and an alert that a party filed a bankruptcy petition could trigger a "kill switch."
- Interesting Case: *In re Hampton*, 319 B.R. 163 (E.D. Ark. 2005).

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Smart Contracts – Court Remedies

Bankruptcy Courts may use a number of remedies to resolve smart contract disputes. A court could compel a defaulting party to:
- Initiate a kill-switch mechanism;
- Use its private key to digitally sign a transaction.

The parties could also enter into a subsequent blockchain transaction that reverses the first, or enter into an off-blockchain transaction.

DAOs:
Decentralized Autonomous Organizations

What?

Why?

How?

Who cares?

Decentralized Autonomous Organizations

*Image from Hollygraphic/Shutterstock.com

DAO Examples

DAO Legal Status

DOAs vs. LLCs

(and other questions of legal status)

DAOs and Insolvency

*Can DAOs
do this?* →

Decentralized Autonomous Organizations

In sum:

- DAOs are a developing structure

- Limited utility and success to date, but advancing

- Law will need to account for DAO structure

- Structure offers a use tool to plan and effect liquidation

Faculty

Peter J. Barrett is a partner in Kutak Rock LLP's Richmond, Va., office, where he concentrates his practice on financial restructuring matters. He represents unsecured and secured creditors, trustees, equityholders, distressed investors and corporate debtors in insolvency matters, including chapter 11 reorganizations, business liquidations and out-of-court restructurings. Mr. Barrett has experience representing interested parties in asset sales and has been involved in a number of complex chapter 11 bankruptcy cases throughout the country involving industries such as manufacturing, hospitality, construction, retail, entertainment and real estate. He also works with other firm attorneys to analyze the effects of insolvency and bankruptcy on corporate and financial transactions. Mr. Barrett is a member of the panel of chapter 7 bankruptcy trustees for the Eastern District of Virginia, Richmond Division, and is licensed to practice in Virginia and California. He received his J.D. from the University of Virginia School of Law.

Camille C. Bent is a partner in BakerHostetler's Bankruptcy and Restructuring practice group in New York, where she concentrates in the areas of corporate bankruptcy, restructuring and commercial litigation. She has significant experience in disputes and transactions arising out of corporate insolvencies, including asset sale and fraudulent-transfer cases, and she has served as the bankruptcy specialist in transactional matters. Ms. Bent has represented debtors, creditors, trustees, committees and other interested parties, and her practice is industry-agnostic. She currently represents Irving H. Picard, Securities Investor Protection Act trustee for the liquidation of Bernard L. Madoff Investment Securities, LLC, and litigates multimillion-dollar avoidance and recovery actions against foreign and domestic entities. Ms. Bent is a 2019 ABI "40 Under 40" honoree and is currently a member of the Bankruptcy & Restructuring Committee of the New York City Bar Association. She also co-chairs BakerHostetler's New York Inclusion and Diversity Committee. Ms. Bent received her B.A. from Johns Hopkins University and her J.D. and M.B.A. from Emory University, after which she clerked for Hon. Pamela Pepper in the Eastern District of Wisconsin.

Howard A. Cohen is a partner with Fox Rothschild LLP in Wilmington, Del., and has more than 20 years of experience in financial restructuring, bankruptcy and creditors' rights matters. He represents debtors, official committees, ad hoc committees, equity sponsors, trustees, asset-purchasers, lenders and trade creditors in bankruptcy proceedings. He also concentrates on the preparation and issuance of nonconsolidation and other Delaware opinions, and advises troubled companies and their boards in insolvency situations. Mr. Cohen represents clients in bankruptcy avoidance litigation, including fraudulent-transfer and preference litigation. He provides counsel in a variety of industries, including health care, retail, oil and gas, media, technology, transportation, manufacturing and real estate. Prior to joining Fox Rothschild, Mr. Cohen was a director of the financial restructuring and creditors' rights group at an East Coast law firm. He also served as a partner in the corporate restructuring practice group in the Wilmington office of a national law firm, and before that, he was a corporate restructuring associate at two international law firms, as well as an associate in the creditors' rights and bankruptcy group of a Florida-based firm. Mr. Cohen is admitted to practice in Delaware and Florida and is Membership Relations Director of ABI's Financial Advisors and Investment Banking Committee. He also is a member of the Delaware Bankruptcy Inn of Court. Mr. Cohen received his

B.S. in 1996 from Florida State University and his J.D. in 1999 from Duke University School of Law.

Jarret P. Hitchings is a partner with Duane Morris LLP in Wilmington, Del., where he practices in the areas of business bankruptcy and distressed-asset litigation. He maintains an international bankruptcy and restructuring practice, and has experience appearing before U.S. bankruptcy courts in principal commercial venues. Mr. Hitchings has experience practicing before the Delaware courts, including the U.S. Bankruptcy Court for the District of Delaware and Delaware's Court of Chancery, particularly with respect to business bankruptcies and other insolvency proceedings. He is Newsletter Editor for ABI's Emerging Industries and Technology Committee and serves on the advisory board of ABI's Mid-Atlantic Bankruptcy Workshop. Mr. Hitchings is a member of the Delaware State Bar Association and INSOL International. He is also a member of Class X of the International Insolvency Institute's NextGen Leadership Program. Since 2016, he has authored or co-authored at least 13 articles that have been published in *The Legal Intelligencer*, *Law360, ABI Journal, Delaware Business Court Insider* and INSOL World. He also has been a panelist in multiple legal education programs, including speaking for the National Conference of Bankruptcy Judges in 2018 in a program titled, "Beyond the Surface of Venue: Real World Bankruptcy Practice in 2018." Mr. Hitchings received his B.A. from Pennsylvania State University and his J.D. *magna cum laude* from Villanova University Charles Widger School of Law, where he was admitted to the Order of the Coif.

Jolene E. Wee, CIRA is the owner, managing director and founder of JW Infinity Consulting, LLC in New York, a financial advisory firm specialized in providing transaction advisory, interim management, litigation consulting, and forensic accounting services to distressed companies and its stakeholders. Using her mathematics and computer science background, she deploys large-scale data analytics to derive forward-looking business insights based on her professional training in accounting, finance and economics. Ms. Wee has served as an advisor to investors, fiduciaries, creditor committees, debtors, legal counsel, distressed companies, high-net-worth individuals, and public agencies on restructuring, bankruptcy, litigation, forensic, financing, merger and buyout matters. She has also performed fraudulent-transfer analyses and business valuations on bankruptcy litigation matters. Her case experience includes companies in the banking, e-commerce, financial services, health care, insurance, manufacturing, professional services, real estate and retail industries with revenues of up to $15B. Fluent in several Chinese and Southeast Asian languages, Ms. Wee was selected as a member of ABI's 2020 "40 Under 40" class. In 2018, she was named Valuation Adviser of the Year by *Finance Monthly Global Awards*. Ms. Wee is a subchapter V trustee in Region 2, covering the Eastern and Southern Districts of New York, and Region 4, covering Maryland, the District of Columbia and the Eastern District of Virginia. She received her bachelor's degrees in mathematics and business administration with a focus on finance from Berea College, and her M.B.A. from Miami University of Ohio.